Det. Bel. Isle & Windsor Ferry Co.

DEVOTED TO NAVIGATION, COMMERCE, ENGINEERING AND SCIENCE.

VOL. XI. NO. 12. CLEVELAND, O., MARCH 21, 1889. $2.00 PER ANNUM SINGLE COPIES 5 CENTS

AROUND THE LAKES.

CLEVELAND, OHIO.

The Sheldon is now in the Cleveland drydock undergoing a general overhauling and calking bottom.

The local inspectors Messrs. DeWolf and McGrath have inspected the fishing boat Hattie L, 16.92 tons.

Mr. H. A. Barr, superintendent of the ore docks at Escanaba, Mich., is in the city, and will remain here three or four days.

The steamer City of Cleveland, arrived on her first trip to-day at 4 o'clock. There was no great trouble experienced in getting through the ice.

Four twenty feet metallic life boats have just been received at the Globe Iron Works company's shipyard from Thomas Drein and Son, Wilmington, Del., for the new boats now in course of construction.

The Stearn Manufacturing company, of Erie, Pa., has shipped to Cleveland two large boilers for the new Bradley and Grover boat, now under construction at Radcliffe's yard, at the head of the old river bed.

Captain Church, of Bay City, who was in port last week, will sail the J. Parrott. The captain has been master of this vessel for seven years. He reports the yards at Bay City as livelier than preceding years.

The new boat, building at Quayle's shipyard for Messrs. Lockwood, Case, and others, will be commanded by Captain Peterson, lately of the steamer Columbia. J. B. Wood has been appointed chief engineer.

Messrs. Williamson Brothers, Philadelphia, have shipped to the Globe Iron works company five of their engines, ash hoist, and steam steerer, to be placed on the new Lehigh Valley line boat, marked by the builders, No. 24.

The new Johnson boat, building at the Cleveland drydock company's yard, is all planked, and the work on her is progressing rapidly under the direct superintendence of Mr. Frank Wright, the manager of the drydock.

Captain Carlton Graves stopped off here for the day last Monday, while on his way to Bay City, Mich, to look after his recent purchase, the propeller Benton. Captain Graves will sail the Benton the coming season.

We take pleasure in recommending the Mount Olive Erasive Liquid, manufactured by Captain D. A. McLachlin, for cleaning varnish and painted articles, without injury to the polish. Price 40c per gallon. Address the Captain at No. 633 Trumbull avenue, Detroit, Mich.

Captain L. H. Wilcox has been appointed to the command of the steamer Columbia; Charles Sterling will sail in her as chief engineer. Mr. Sterling joined the Columbia five years ago, and by strict attention to his duties has finally worked his way to the position of chief.

H. D. Goulder, esq., who has been in Chicago during the past week, conducting the case for the Chamberlain against the Pridgeon, has returned to the city with high feathers, his argument having prevailed with Judge Blodgett. We will next week be in a position to give the opinion of the judge.

The Cleveland shipbuilding company is building a new four collared derrick for the steamer Aurora, has sent three finished cylinders to Bay City for steamers building at that port, and two universal couplings. They have also placed the cabins on No. 4, kitchen on the R. R. Rhodes at Radcliffe's yard.

Meteorological summary for the week ending March 19, 1889:

Mean barometer	29.94
Mean temperature	41.1
Mean humidity	67.5
Total precipitation	.00
Prevailing direction of wind	S. E.
Total wind movement, miles	1270
Average cloudiness	3 4
Average state of weather	Clear
Max. temperature, (highest)	64.0
Min. temperature, (lowest)	29.5

W. H. HARMON, Sergeant Signal Corps.

The Shipowners drydock will soon be in readiness for business; yesterday the dock was flooded again, and today the gates will be placed, the water will then be pumped out of the dock, and if the gates are found perfect the coffer dam will be dredged out without farther loss of time, and vessel work will be commenced.

We have recently received a handsomely illustrated special catalogue from the Henry R. Worthington steam pump manufactory, whose New York offices are at 145 Broadway. The catalogue is a complete epitome of the process of condensation, and full instructions for handling the Worthington independent condenser is clearly set forth.

The first of the steamers being built at the Cleveland shipbuilding company,s yard will probably be launched on Saturday, the 23d inst., and will be named Frontenac. She will be commanded by Captain Murphy. She has been built for the Cleveland iron mining company and is a masterpiece of steel shipbuilding. Her sister ship the Pontiac is well along and gives evidence of more secret beauty. The Pontiac will go out under command of Captain James Lowe.

The Bradley and Grover steamer, building at Radcliffe's yard, is well advanced, and will be launched in about five weeks. According to contract she is to be ready for business May 1. Her boilers have arrived here from Erie, Pa., and her engines are fore and aft compound, built by the Cleveland Shipbuilding company; her dimensions are 250 feet keel, 268 feet over all, 40 feet beam, and 21 feet depth of hold. Her fine elliptic stern looks handsome, and she will be as strong as wood and iron can make her.

The Cleveland vessel owners association have adopted the following schedule of wages for the coming season: on steamers: per month, first engineers $95 to 115, second engineers $65 to 75, first mates $65 to 80, second mates $45 to 60, cooks $45 to 55, helpers $10 to 15, firemen $30 to 35, wheelsmen $30 to 35, lookout $30 to 35, deck hands $15 oilers (when carried) $40, firemen—fitting out, $1.50 per day and board themselves. On consorts and sail: first mates $50 to 65, second mates $35 to 45, cooks $30 to 35, seamen $30 to 35, boy $15.

The River Machine and Boiler works, River street, have just completed the repairs to the boiler on the Jim Sheriffs and Egyption at Ashtabula, and repairs on the Wocoken, tug Dennis Crowley, and tug L. P. Smith. They are now putting new deck engines and pumps on the Oscar Townsend in Toledo, a new pump on the tug John Gregory, and a general overhauling to the Christie Castle, besides which, they are putting new crank shaft in the Maggie Sanborn. The River Machine and Boiler works are going into the general supply business for steamboats and vessels, including steam fitting.

It is gratifying to learn that the volume of rade has increased sufficiently to admit of a Fairbank's testing machine being erected for the purpose of testing iron and steel coupons used in the construction of boilers, etc. Formerly it has been necessary for our local inspectors to forward on to Buffalo, N. Y., any coupons that required testing, and there was consequently a delay before work could be carried on. The new machine will facilitate the building of machinery in the city, and enable the local inspectors to grant a certificate without loss of time. The machine has been erected in the basement of their offices.

The fleet owned by Captain Friese, of Milan, Ohio, will be commanded as follows: Steamer William Edwards, William Collins, last year master of the Eighth Ohio, will be captain, Mr. S. A. Wells chief engineer. The schooner Golden Age, Captain John Flohr. Charles Foster, Captain Hastings, who recently resigned last season, has been reappointed. M. W. Page, Captain Daniel Stalker. Captain Stalker has been in the M. W. Page five years, and has given her extensive repairs this season. Much new work has been put on the Golden Age; also on the steame rWilliam Edwards, and considerable new deck.

Mr. J. M. Wight, of the firm of Tear & Wight, has gone into the inevitable with Miss Mattie Speed. If it is possible to make Miss Mattie happy, we do not hesitate to say that Mr. Wight is the man to do it. The marriage ceremony took place on Wednesday evening, March 20th, close on to the ides of March, and the bride will do well to look out for breakers. The marriage took place at Scoville avenue M. E. church, and was conducted by Rev. Mr. Smith If the old adage is true, viz., "Change of name and not of letter is marriage for worse and not for better," we hold that this sweetheart will be happy all her life long, and may the forecast of the MARINE RECORD go out with the young people until time ceases. God bless you.

The Globe Iron works company are keeping their extensive plant moving at a lively gait. At their new erecting shop a large traveling crane has been put in place manufactured by the Morgan engineering company, Alliance, Ohio, and the work of erecting will be greatly facilitated by the addition of this powerful machine. Besides the usual new work on the several steamers, now under construction, the firm are doing general repairs to the machinery and boilers of the following steamships: Sparta, Havana, George T. Hope, Continential, Colonial, Republic, Specular, Samuel Mather, Ballantyne, Margaret Olwell, Smith Moore, and John M. Glidden, all of which are under the directinn of their superintendent engineer, Mr. R. S. Hay. At the shipyard the boat building, as No. 24, for the Lehigh Valley line, is nearing completion. She has three steel decks, including the orlop deck aft, and she will be ready to launch in about two weeks. Her four boilers are ready to be taken on board; the dimensions of three of them being 11 feet 10 inches by 12 feet.

The boat marked by the builders as No. 25, also for the Lehigh Valley line, is all plated, and the two steel decks and orlop deck are well along. She will be ready to launch in six weeks. No. 26, the steamer building for Captain Frank Brown, Wallace, and others, is all in frame, and all of the midship plating is on her. No. 27, the steamer recently contracted for by Ira H. Owen, is now half in frame, and work on her is steadily progressing. While visiting the shipyard we were pointed to, and watched the workings of a splendid machine, recently imported from Glasgow, Scotland, and well worthy the inspection of machinists. It is a double punch and angle iron shears combined, and goes through half-inch steel plates as easy as if it was cutting soft pine; space seems to be economized, also, for it occupies only a small portion of the shop; we also noticed a new eighteen feet planer. Through the courtesy of Mr. John Smith, the superintendent of construction at the shipyard, we were escorted through the new building just completed, and found the ground floor occupied as a general office and superintendent's office, and in the addition a large, well regulated storeroom; on the first floor, a well lighted drafting room, wash rooms, etc., all splendidly finished in clear, varnished Norway pine, with polished black walnut furniture and the usual appurtenances.

TOLEDO, OHIO

Special to the Marine Record.

E. C. Smith, of Duluth, has bought the tug Pathfinder from Hardy Bros. for $7,000 cash. She will be taken to Duluth on the opening of navigation to do raft and harbor towing.

Steamer Saginaw, of the Presque Isle Co, sunk at the dock in the Ohio Central slip on Monday.

Inspectors DeWolf and McGrath were here on Tuesday and inspected the yacht Minnie D., steamer Douglass, tugs Joe S. Spinney and Fannie Tuthill.

Captain Duncan Stalker, formerly of the schooner Porter, left here Monday for Milwaukee to take charge of the propeller Omaha.

Captain Wm. J. Harlem, formerly of the schooner Leighton, left here Tuesday for Michgan City, to take charge of his steambarge, the Michael Groh.

Maumee river is free and clear of ice and fishermen expect to get their twine put in the bay next week.

DETROIT, MICH.

Special to the Marine Record.

Thomas McGregor, boiler maker, shipped, on the 6th, a marine boiler 5x9 for the tug Westcott, laying at Trenton, Mich. On the 16th he shipped a marine boiler 9x15, to carry 150 pounds of steam, to Cheboygan, Mich, to be placed on the tug Duncan City. He has completed a boiler of Scotch type, 13x13, 110 pounds steam, to be placed on the tug Niagara, on her arrival here from Bay City. He is building two Scotch type boilers, 11½x11 each, for 160 pounds steam, for the Craig shipbuilding company, Trenton; also building a marine boiler, 4 feet 6 inches by 8 feet, for 120 pounds steam, for the tug Grayling.

Parrish Brothers & Peck have placed upon the steamer City of Cleveland the latest appliance of electric bells, which can be used at nineteen places on the steamer by the captain, to notify the engineers of his requirements.

Charles C. Chadwick, of this city, has been appointed superintendent of all boat signals.

The Eagle Iron works are full of work, building boilers and duplex hoisting and deck engines, for which they have many orders.

Henry Scheele, jr., and Captain Duncan Buchanan were here from Sheboygan, Wis., last week, and purchased the schooner Seaman from Captain Humphrey; consideration $5,000. Her port of hail will henceforth be Sheboygan, and Captain D. Buchanan will command her.

John Oades & Son, shipbuilders, are building a steamship 213 feet keel, 228 feet over all, 36 feet beam, 14 feet hold; her frames are all up. She is molded on the floor with 6 inch flitch 18 inches deep, bilges 14 inches with extra cross floors between, and extra futtocks. The outside plank will be garboard 6 inches, bottom 4½ inches, bilges 5 inches. She is being built of very fine timber and will be diagonally iron strapped, and will be as strong as good timber and iron can make her. She will carry about 1,500 gross tons, or about 1,000,000 feet of lumber. She is for sale.

The schooner Palms has received one-half new deck frames, all new decks, hatch coamings and hatches at a cost of $2,600.

The barge Melbourne is receiving one-half new deck frames, new deck, hatch coamings and hatches, some new stanchions and bulwarks, and calking, to cost about $2,000.

The propeller Annie Smith has received new timbers and ceiling forward, all new beams from forward of boiler to her stern, new cabin, iron straps 14x¾ on two sides of keelson; considerable work has also been done on her machinery and boiler at a cost of about $6,000.

The schooner Ganges gets some new frames and ceiling aft, part new deck, cabin coamings, pawl post, shoe pieces and recalking inside and out, costing about $1,500.

The schooner William Home has received a general overhauling costing about $1,000. She received repairs to the amount of $3,500 at Manitowoc last fall before coming here to lay up.

The schooner Belle Hanscomb is getting a general overhauling.

The price paid for the barge John Breden by Comstock & Co., of Alpena, was $5,000. The Breden was built at Port Dalhousie in 1862, but was rebuilt about 1884. She measures 303 tons, rates A2, and is valued at $7,000 in the Lloyds.

The Ogdensburg Transit Company was organized at Detroit Tuesday. The new company includes the C. V. line of propellers. Orders were placed for five new boats, two of them to be delivered this summer and the other three next spring. The new boats are to be considerable larger than either the Averill or Haskell. E. C. Smith was elected president, F. W. Baldwin, treasurer, and Louis Hasbrouck, secretary.

The Detroit Dry Dock Co. will build three steam ships for the Vermont Central railroad, to run between Chicago and Buffalo. The boats will cost $140,000 each, and will be finished next year.

The schooner Typo is receiving new floor, new stanchions and rail at a cost of $1,500.

WILLIAMS.

WEST BAY CITY, MICH.

Special to the Marine Record.

Bay City has a new towing association with a capital of $60,000.

Captain James Davidson has five new vessels on the stocks at West Bay City. One schooner will carry 85,000 bushels of wheat. She is already under charter to carry iron ore from Escanaba to Ohio ports at $1.10. A new steam r on the stocks has 250 feet keel, and is 1,600 tons burthen. She will be out in the latter part of June.

At the shipbuilding yard of James Davidson over four hundred men are as busy as beavers in autumn, constructing four large boats now on the stocks in the yards. One large schooner of 2,200 tons burden is completed save the rigging out, painting, etc. She will be launched as soon as the ice will permit.

In addition to these four boats the keel of a new fire tug for Captain Armstrong will be laid this week. The dimensions are as follows: Keel length, 65 feet; width, 16 feet; depth, 6 feet. She will be completed and placed in the river at the opening of navigation or soon thereafter. The keel of a large new lighter for Detroit parties will also be laid this week. Besides the men working in the yards there is an army busy in the woods gathering timber. There have been during the past three weeks as many as 340 men and 120 toams hauling and skidding timber.

SARNIA, ONT.

Special to the Marine Record.

The schooner Pandora is receiving all new deck frames and deck, nine new stanchions on the starboard side, and a new forecastle.

Captain P. Kerwin has given his schooner Sligo new keelsons, two new center board boxes, some new deck beams and deck forward, new forward hatchway and hatches, and a new forecastle.

The schooner Mary is receiving new frames and breast hook, new ceiling forward, bilge strakes, assistant keelsons, center board box, some new stanchions and bulwarks, and a new set of sails.

The schooner Aurora is getting new covering board, stanchions, bulwarks and rail, some new deck, new bowsprit and jibboom, and a general overhauling.

Captain Joseph Glass' schooner Hercules is receiving new deck frames and deck forward and aft, new stanchions, bulwarks, covering board and rail all around, new pawl posts and new forecastle, and a general overhauling, costing $4,000. WILLIAMS.

MILWAUKEE, WIS.

Captain David Vance of Milwaukee, who has been abroad for the past six weeks, has returned home. He laughs at the stories that he went to London after more insurance agencies. He stayed there only a few days and did not even look for any companies. Most of his time was spent at Nice and other points in Southern France, where the lemons, oranges, and olives are ripe on the trees.

Captain J. V. Tuttle of Milwaukee is recovering from a long and severe illness.

SAULT STE. MARIE.

Announcement has been made of an important change in the rules of the lock which will greatly hinder the movement of passenger vessels through the St. Mary's falls canal. By the new rule all craft will have the same rights and have to await their turn. Formerly passenger vessels had the right of way and could lock through without delay. It is expected that much annoyance and delay to locking will be avoided. The change will work to the advantage of the Sault.

ASHTABULA HARBOR, OHIO.

Special to the Marine Record.

Captain George Fields, who has for many years been connected with the tug lines at this port, died Sunday morning, the 10th inst., after a long and severe illness.

The P. Y. & A. docks are putting into position another of the Raser and Baker fast ore hoists, the King Bridge company furnishing the iron works. The hoist is entirely of iron. The same docks are erecting an eight pocket coal schute to be used almost exclusively in fueling steamers. F. L. T.

PETROLEUM FOR FUEL.

In speaking of petroleum as used in the United States for fuel, Engineering says:

"America, which waited so long to be taught by Russia how to use liquid fuel on a large scale, has at length rushed into the business with ardor, and promises before another year to forge ahead of her rival. Why the United States should have lagged so long is capable of easy explanation. When the oil industry was origanally developed, their fuel was every where cheap, and no necessity existed for a rival to wood and coal' Moreover, the American raw petroleum gave so large a yield of kerosene and lubricating oils that no particular balance of refuse was left inviting utliization. It was for this reason that the Americans looked coldly on the liquid fuel progress of Russia, and made no attempt to beat it. A few years ago, however, large quantities of oil were found in the state of Ohio, not very well adapted for refining purposes, although many efforts were made to render the distillation of kerosine a paying operation. At length the Standard oil company, to prevent competition in the refining trade on the part of the Ohio refiners, bought the whole of them out, and then proceeded to utilize its monopoly by making arrangements to pipe the oil to Chicago for fuel purposes"

This line is 270 miles long, and the oil is supplied through an eight inch pipe As the use of oil is far preferable to the use of coal in some industries, there was an immediate demand for the fuel as soon as it was offered at Chicago. Appliances for the consumption of oil were at once introduced, some of them copied from the Russian type and some modified and some original in construction, in order to meet the requirements of the local factories.

The three methods most generally employed for the combustion of the petroleum is the distilling the oil in a gas plant until it is reduced to a gas, after which it is burned under boilers similarly to natural gas. Another method is forcing the oil in a spray under the boiler by compressed air. Perhaps the most usual method, however, is spraying the oil into the furnace by an injector operated by a jet of steam, where it becomes vaporized and mingles with the air which is also thrown from the injector.

LAKE ERIE HARBORS.

Major L. Cooper Overman, who is in charge of the improvement of the harbors on Lake Erie, west of Erie, Pa., yesterday opened the bids for continuing the dredging of the proposed Toledo harbor straight channel through Maumee Bay from the mouth of the Maumee River to seventeen feet natural depth in the lake along the line of the straight channel, incuding the crib range. The straight channel, when completed, will be about seven and three-quarters miles in length, 200 feet in width, and the depth below low water must be seventeen feet. The specificatious for the work upon which bids were asked this year called for the dredging of 920,000 cubic yards of matter from the channel at Toledo along the line of the straight channel. This is the fourth time bids have been invited, the figures given on the three former occasions not having been accepted. Hingston, French & Rogers, of Buffalo, N. Y., offered to do the work at 22½ cents per cubic yard; William St. John & Son, of Toledo, for 22 cents per cubic yard; and James Rooney, of Toledo for 20 cents per yard. The contract if let will provide for the excavation of 20,000 cubic yards each month, and for the completion of the work before November, 1890

Major Overman also opened the bids for furnishing material and doing work for proposed repairs at Huron harbor. B. S. Horton, of Vermillion, offered to do the work for $4,716 85; C. H. Strong & Co., of this city, for $5,042.50; and Stang & Kerr, of Lorain, for $4,685.20. A number of dredgers from Buffalo, N. Y., Toledo, Detroit and other places met at the Weddell House, for the purpose of combining interests in bidding upon the work of excavating the channel ai Toledo. The contract being a large one it was agreed that the job was too heavy for one man to attend to. Eight or nine dredges, it was thought, would be needed. The contractors had bid too high on the three previous occasions, and although they claimed that the figures given before were not exorbitant they decided to drop half a cent per yard. This was done, and the contractors sent in their bids. It is estimated tnat the work will cost between $150,000 and $200,000. Among the contractors present at the meeting were E J. Hingston, and William Richardson, of Buffalo; E. H. French, James Rooney, W. E. Rooney, and J. W. St. John, of Toledo; and R. J. Crane and Thomas W. Hubbell, of Detroit.

If contracts are let, the harbor at Huron will be repaired, and the excavation of the straight channel in the Toledo harbor will be pushed forward. The dredging of the proposed straight channel at Sandusky, from the city docks to the deep water near Cedar point, will also be carried on. This channel will avoid the three corners of the pressnt water way and will shorten the route to the open lake about three-fourths of a mile. It will be about two miles long, 200 feet wide, and 17 feet deep. About 600 feet of the eastern breakwater will be constructed in the Cleveland harbor. Over 1,110 feet of the eastern arm of the breakwater is now built and about 1,800 feet will have been finished this coming fall. The eastern arm will be 5,500 feet in length and about 3,700 feet will remain to be constructed after this year. The expenditure the coming summer will be in the neighborhood of $88,000. Donnelly, of Oswego, has the contract for the crib work and that will cost $68,000. The Kelly Island, Lime and transportation company, of this city, will furnish the foundations at a cost of about $5,000, and A. Lecour, of this city, has the contract for the iron work. The iron contract will call for an expenditure of $8,000 or $9,000.

"It seems strange that the water front has not been used. There was some talk of building docks a few years ago, but nothing came of it. The property fronting on the water is owned by New Yorkers, the Lake Shore Railway, and the S. S. Stone estate. I believe terms could not be made with the New York people. I have learned recently that the Lake Shore and Cleveland & Pittsburg companies will construct docks in the harbor of refuge. I have supervision over the matter only as far as to see that the harbor is not filled up, and that slips are not extended beyond the dock line established by the secretary of war. The railway people I suppose have secured the water front from the New York owners, for I was asked recently if they could dump earth excavated in digging slips into the water. I replied that if they desired to dump the earth into the water they must build cribs to hold it, as that is the only way provided by the government for fiilling for dockage purposes."

CANAL TOLLS AND ENLARGEMENT.

Saturday's Mail gives a lengthy account of the interview between the deputation which waited upon the Dominion government last week and the government relative to canal tolls and canal enlargement. It speaks of it as "one of the largest and most influential deputations that has visited the capital." The gentlemen comprised representatives from the Canadian marine association and the boards of trade from Montreal, Kingston, Hamilton, Port Arthur, and Winnipeg, and also representatives of the leading ocean steamship lines. The subjects of canal tolls and the enlargement of the St. Lawrence canals were very fully and ably discussed. Mr. Thomas Marks represented Port Arthur and made a good speech. He is reported as given below: Mr. Marks, of Port Arthur, was the first to introduce the subject of deepening the canals. If the canals were made of an uniform depth with the Welland canal, so that vessels of that draught could proceed from Lake Superior to the sea, the problem would be solved. No other route would have a chance to compete with the St. Lawrence route. Then the whole merchant marine of the United States would pass down that route. It would solve the problem of interprovincial trade, for vessels could carry coal from the Nova Scotia mines and lay it down at Port Arthur for a dollar and a half per ton, and could return with flour and other agricultural products of Ontario at equally low rates.

THE CRUISER VESUVIUS.

The trial for rapidity of fire of the guns on the cruiser Vesuvius, which was intended to take place during the past week, was deferred because of existing trouble with some of the air valves. It is not thought, however, that the delay will be of more than ten days' duration, and with the remedying of the difficulty the little cruiser will be run a short distance below Philadelphia, and her battery given its test. The loading apparatus has been given a thorough preliminary test, and has proved itself satisfactory to the designers. It was found that a projectile could be loaded in less than one minute, thus giving a rapidity of fire of one projectile a minute from each gun. It was also found that from the three guns a shot could be fired once in every thirty or forty seconds. The contract calls for a rapidity of fire from each gun of one shot in every two minutes. But if, as it now looks from the loading facilities, a fire can be maintained from each gun of one shot per minute, the contract specifications will be largely exceeded.

Since the performance of the Vesuvius there has been some painstaking scrutiny of foreign vessels by members of the naval intelligence staff, and the data now at hand is in such shape that comparisons between the dynamite cruiser and vessels of her class can be made with all respect to actual figures. Regarding the Vesuvius as a torpedo vessel, there are of what may be termed "sea going torpedo vessels" only six in existence with which she could be compared. These vessels are the Iljin, of 600 tons; the Tripoli, of 800 tons; El Destructive, 850 tons; the Sharpshooter, of 735 tons; the Rattlesnake, of 550 tons; and the Bombe, of 320 tons, though the latter is almost too small for such rating.

A gentleman interested in the production of half a million tons of ore yearly states his opinion of the ore market for 1889 as follows: "It makes no difference what the Marquette, Menominee and Gogebic ranges do, we shall push the Vermilion, and shall mine nearly 900,000 tons. The smaller mines producing at greater cost and a less valuable ore, will have to stand back this year. The Chandler alone will have 100,000 tons on stock piles at the opening of navigation, while the Minnesota and other mines will have 250,000 tons out by May 1."

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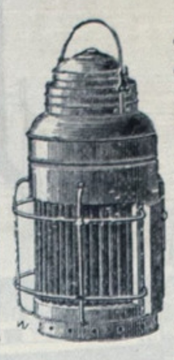

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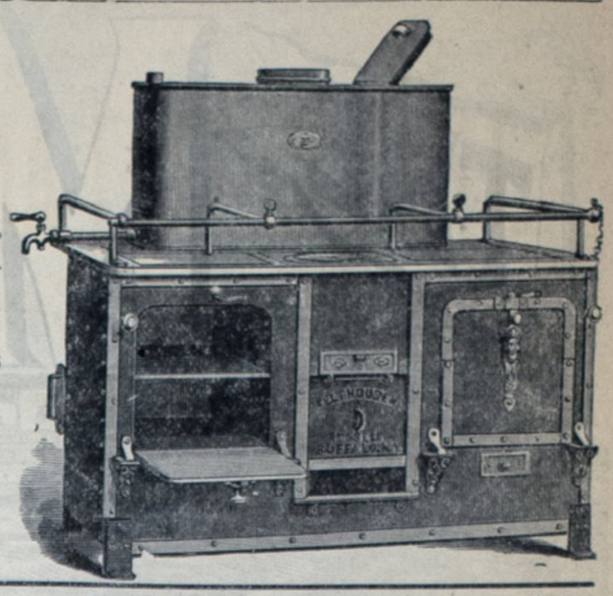

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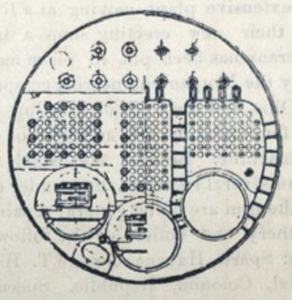

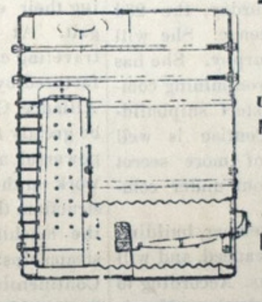

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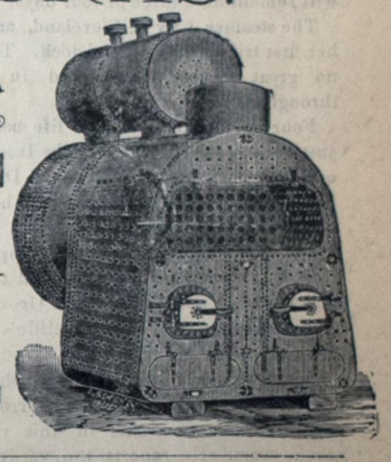

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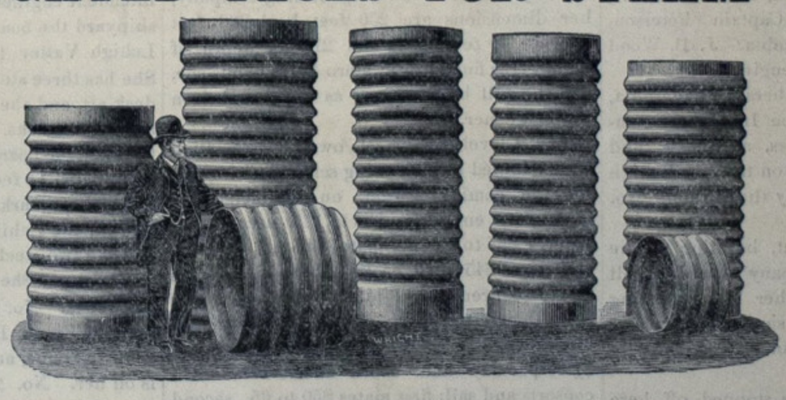

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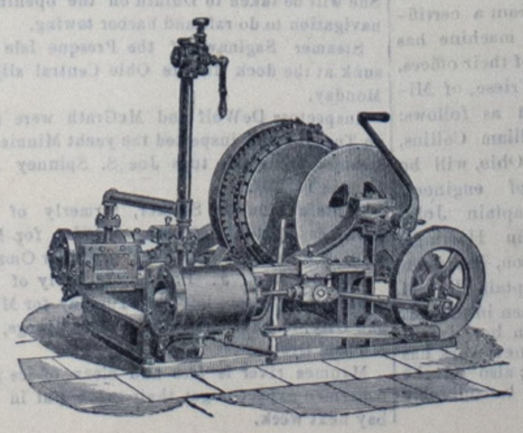

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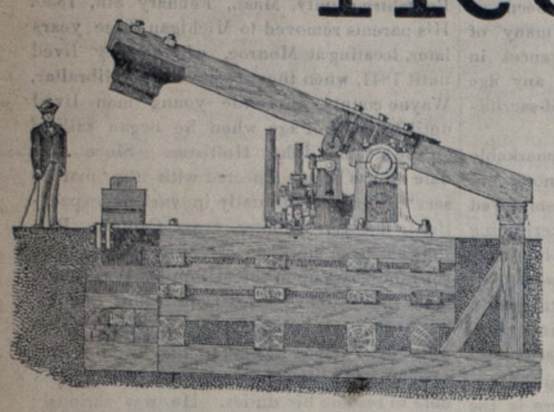

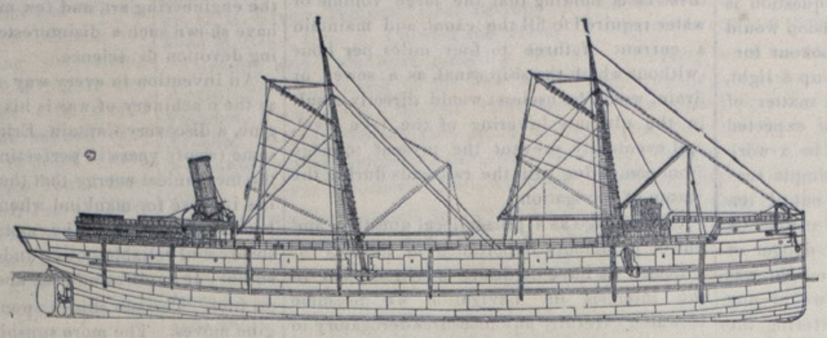

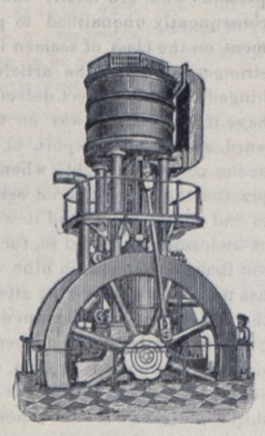

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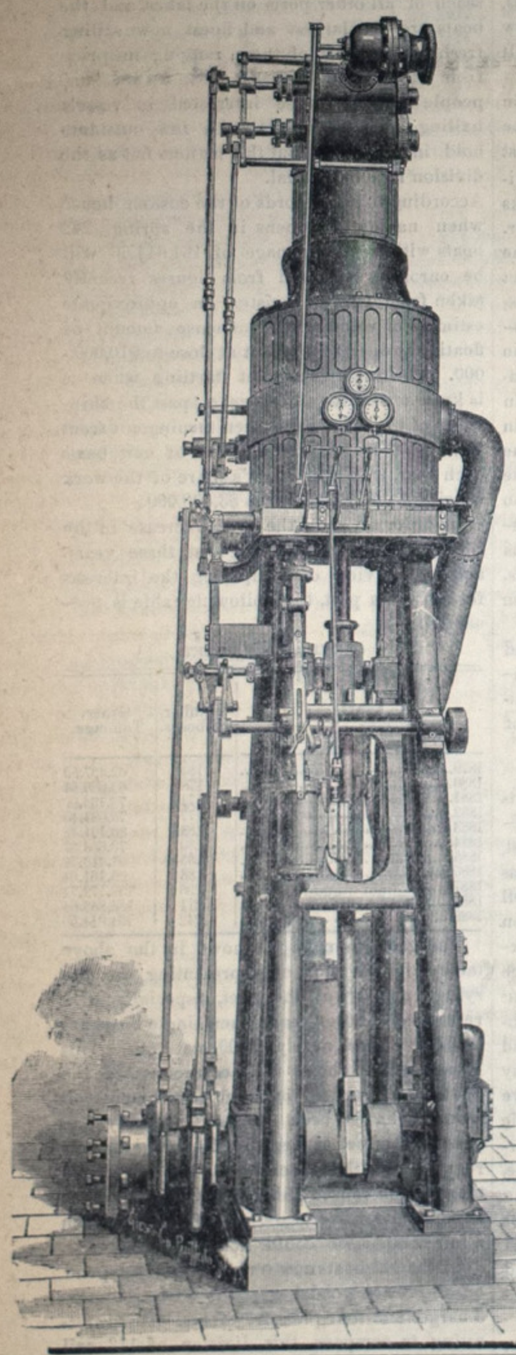

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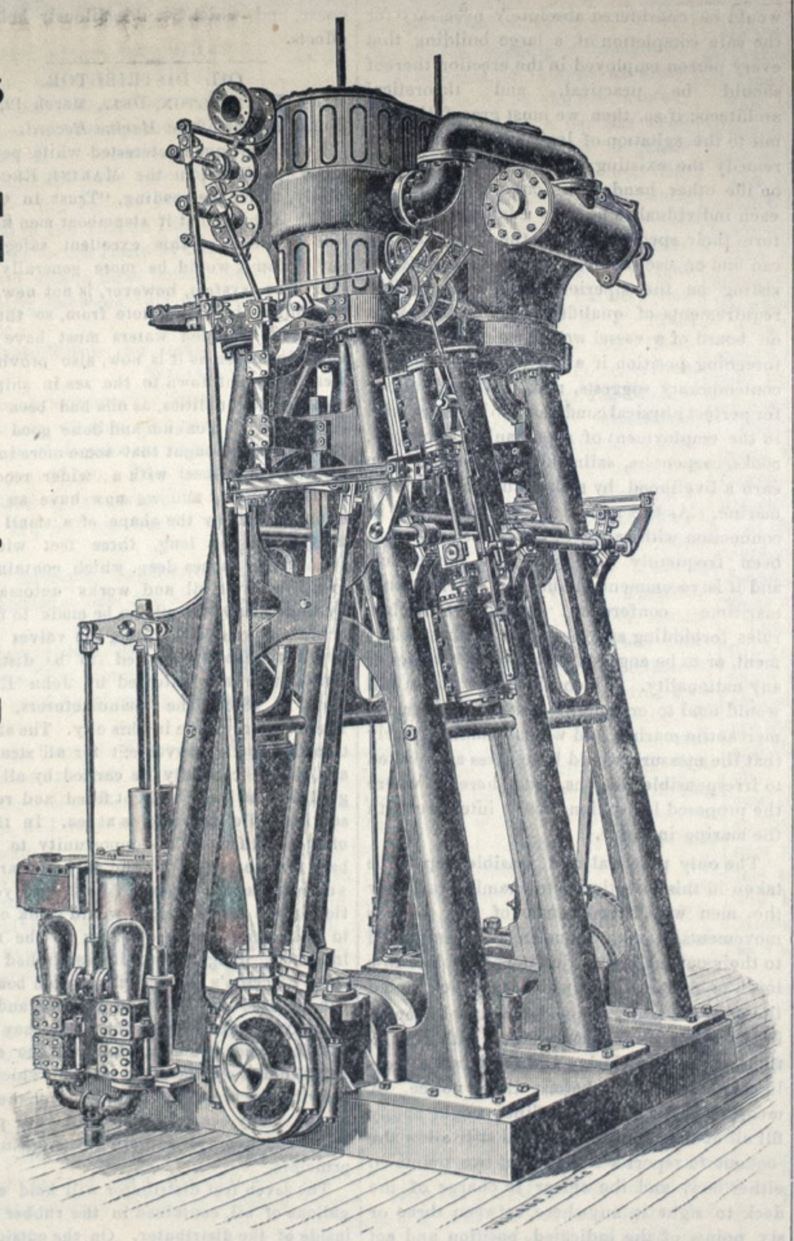

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Marine Record.

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THOMAS WILLIAMS, Associate Editor.

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MARINE RECORD—OFFICIAL PAPER.

A CAUSE OF COLLISIONS.

The New York *Maritime Register* insisis that color blindness in seamen is a fruitful source of coliisions, and saysthat no color blind person should be employed on shipboard; also, that eventually a system will be adopted through legislative enactments to prevent any person joining a vessel who has defective vision. We are decidedly opposed to crippling our ships or seamen in any sense, and should like to see that the members of the mercantile marine perfect physically, mentally, and morally. In fact all classes of seamen should maintain a standard of perpetual youth, if our cotemporary so pleases. But as we are of a more practical turn of mind, we can scarcely believe that such an eminently desirable state of affairs are ever likely to eventuate, at least not on this planet, and consequently we must rest satisfied with the natural specimens of marine monsters who come under our observation daily. Sailors as a class are the most healthy and vigorous men in the world, otherwise they would be entirely unfitted for the arduous duties which they are bound to perform in the every day course of their floating existence, and when natural infirmities arise through age, hardships, or inattention to the original robust physique, then Jack must perforce drop out of line, and seek for the means of support from some other source. Near sightedness, short sighted or defective vision in any sense, including color blindness, is more easily discovered on shipboard than elsewhere, and at once renders the sailor unqualified to earn wages. We do not agree with our contemporary when it is stated as a certainty, that many seafaring men have defective vision, and are color blind. Take the simple and regular duty of steering a ship for instance. In this case a sailor is tested every few hours by theofficer of the watch,and we think that if the average man brought up on shore had to stand blinking at a small black speck six, or perhaps eight feet away, and keep it on a line with the lubbers point, for two hours at a stretch, in the teeth of wind and rain, his eyesight would be considered simply superb. On the other hand if he had to look for a cloth of canvass to shiver a few hundred feet away from him, as the leech of a main top gallant sail would be, and con the ship along with this only for a guide, then his sight might be pronounced magnificent. Quoting again from our contemporary, we learn "that the necessity for good eyesight in a sailor is so obvious that it is generally taken for granted that all sailor men are superior to landsmen in the keeness of their vision, a popular delusion, which, for the interests of the public it would be well to have dispelled." We insist that the seamen soptic, carry a more correct sense to the brain when he is afloat, than any pair of shore eyes, however well mounted, and that there is a popular delusion to dispel; the every day practice of seamen will give ample testimony to the contrary. Nor do we purpose to hear or read the physical character of seamen villified by persons who are totally inexperienced, and consequently unqualified to pronounce judgment on the class of seamen in general. The strongest point of the article in question is hinged upon the effect defective vision would have if the seaman was on the lookout forward, and failed to report, or pick up a light, or the color of a light, when as a matter of practice the lookout is not asked, or expected to find out the color, and it would be a work of uselessness if he did so, for the simple reason that the lookout, in nine cases out of ten has no power whatever to alter the course of the vessel, however imminent the danger of collision may be at the moment the light was sighted or reported by him, nor would any action be taken in the matter of altering the ship's course until the officer in charge of the deck was thoroughly convinced, not only of the color of the light sighted, but also of his lawful right to alter the course, or to take other measures according to the ordinary practice of seamen, in accordance with the well known and established international rules of the road at sea. In any case the lookout is an irresponsible person, and requires at all times a strict supervision, and while one or two excellent pairs of eyes are sometimes a preventive, or an assistance, yet there is in actual service not one ship's officer in ten who would not consider himself blamable if the lookout reported an object before he had sighted it himself, not solely because he must be more alert, or because he has any better eyesight, but he usually occupies a more elevated position, and has accordingly a wider horizon. This fact coupled with his sense of responsibility, and the knowledge that he can not possibly avoid trouble except through his own keenness, knowledge and diligence, are the essential attributes of a sailor in charge of a vessel's deck, hence the feeling of breach of trust must necessarily follow if he is for a moment regardless, or ignorant of his surroundings, even under ordinary circumstances. To draw a parallel case, we might ask our readers if it would be considered absolutely necessary for the safe completion of a large building that every person employed in the erection thereof should be practical, and theoretical architects; if so, then we must gracefully submit to the agitation of legislative faculties to remedy the existing state of affairs. But, if on the other hand, it is only necessary for each individual to be fully competent to perform their special share of the work, then we can find no use for legislative enactments, insisting on the superior, though unapplied requirements of qualifications. The lookout on board of a vessel would be placed in the foregoing position if a law was passed as our contemporary suggests, making it compulsory for perfect physical conditions to be anessential in the employment of rope-haulers, stewards, cooks, carpenters, sailmakers and others who earn a livelihood by sailing in the merchant marine. As this matter of color blindness, in connection with causes of collisions at sea, has been frequently brought before our notice, and it is recommended that the international maritime conference should formulate rules forbidding any person to seek employment, or to be engaged on board of a vessel of any nationality. We consider that such a bill would tend to cripple the growing American mercantile marine, and we have shown clearly that the measure would be useless as applied to irresponsible persons, and here is where the proposed legislation would interfere with the marine industry.

The only practical and feasible step to be taken in this direction is to examine carefully the men who have control of the vessel's movements, leaving the means to be employed to their own skill and judgment, subject to a local, or naval tribunalwhich may be granted the power to issue, suspend, or cancel licences in the event of non-compliance with regulations, or when a glaring and faulty act of negligence was brought before their notice. A measure based upon these lines would amply fill all of the requirements, and still allow the lookout to report a light about two points on either bow, and the officer in charge of the deck to sight it anywhere between three or six points of the indicated position and act accordingly.

HENNEPIN CANAL.

The Illinois legislature have postponed the day set for the final vote on the Hennepin canal scheme to April 11. The friends of the bill are in hopes that in the interval the opponents of the measure will be gained over to favor the proposed open sewer, and by allowing the bill to assume a political feature they expect to secure the seventy-seven votes necessary for the passage of the act. The measure was made a special order for today, and the fact that the opposition has been enabled to have the consideration postponed, argues a power in the legislature strong enough to take care of the important interests involved, backed up by the opinions of civil engineers and scientists. W. L. Morris, captain of engineers, is reported as saying that "a ship canal is entirely out of the question, for it is not probable that the federal government would spend millions of money to construct a waterway for the passage of gunboats, when a naval vessel could not get through the canal during three fourths of the year, on account of the canal being frozen up during the winter months, and partially dried up at one end during a portion of the summer months," and, he might have added, navigation hazardous during the short period intervening.

We have on former occasions pointed out these facts holding that the large volume of water required to fill the canal, and maintain a current of three to four miles per hour (without which the ship canal, as a sewer or drain, would be useless) would directly result in the ultimate lowering of the lake level, and eventually prevent the present tonnage from competing with the railroads during the season of navigation.

Of drainage as a purely local question, and one of paramount importance to the city of Chicago, we have no desire to criticise, but in the interests of navigation we presume to watch carefully any measures derogatory to the welfare of transportation by water, and, in this connection, we can not but notice that eminent scientists and physicians have submitted opinions, all tending to show that sewerage in the water would produce diseases, alike hurtful to man and beast, and, yet, in the face of such important evidence, the promoters and the supporters of the bill actually insist that the waterway would be beneficial to maritime interests.

There is danger to be apprehended, however, if party politics are allowed to enter into the consideration of the bill. In the meantime a contemporary suggests that the opponents of the ship canal are losing ground, and that when the bill comes up for a vote April 11, there will be little opposition. Ex-Senator Bell, of Peoria, a member of the drainage committee, is quoted as saying that, "an amendment providing for a commission to inspect the work when finished, would remove all the objections of the representatives from the Desplaines and Illinois Valley people." A very logical conclusion, no doubt, for their protests would be then unavailable to remedy the existing evils, and they would be obliged to grin and bear it, or die and forget it, a circumstance, by the way, immaterial to the interests which had originated the cause, and which would callously behold the effects.

OIL DISTRIBUTOR.

WILMINGTON, DEL., March 19, 1889.

To the Editor of the Marine Record.

I was very much interested while perusing a letter published in the MARINE RECORD recently, under the heading, "Trust in God and Oil." I think that if steamboat men knew the full qualities of this excellent safeguard to navigation it would be more generally used at sea. The system, however, is not new, for we have bible history to quote from, so that pouring oil on troubled waters must have been as efficacious then as it is now, also proving that men, who went down to the sea in ships, were aware of its qualities, as oils had been used in bags filled with oakum and done good service. It has been thought that some more improved method would meet with a wider recognition from mariners, and we now have an oil distributor made in the shape of a small metalic boat, seven feet long, three feet wide, and twenty-one inches deep, which contains a bellows filled with oil and works automatically; by these means the oil can be made to flow fast or slow as wanted, by using the valves to regulate the quantity desired to be distributed. This device was patented by John Ericcson, Nov. 13, 1888. The manufactnrers, Thomas Drein & Son, reside in this city. The size mentioned above is convenient for all steamboats, and should certainly be carried by all passenger boats, as it can be kept filled and ready for service while the vessel is at sea. In the time of storm there is no opportunity to prepare bags for the use of oil, and only a clear-headed and experiencen captain, like the one you mention in the recent article, would think of trying to make and operate oil bags in the midst of imminent danger; but if vessels had one of these Ericcson's oil distributors on board they can be used for no other purpose, and consequently the crew would know that they were in position when wanted. I have been at some pains to find out the exact way in which these distributors are to be used, and for the benefit of the many seamen, who read your paper, I shall endeavor to explain the workings and principle.

The seven feet distributor will hold eighteen gallons of oil, contained in the rubber bellows inside of the distributor. On the outside there are two heavy ring bolts, one on each end, and when required, lines may be fastened to these ring bolts and the distributor lowered to the surface of the water, then the water, rushing up through the holes in the bottom of the distributor, presses against the bellows and forces the oil out of the valves, when the oil finds an outlet through the spaces left in the sides and top of the casings. In the case of a sailing vessel using the automatic apparatus, with a head sea, the distributor should be lashed on to the bowsprit, then the oil would flow and spread on both sides of the vessel and prevent seas from coming over the bows, sides, or stern. If the vessel had a heavy beam sea to contend against the distributor should be lashed to a boom or spar, and run out as far as possible from the ship's side, and it would be found that the oil would have the effect so graphically described in Captain Phelps' letter to you.

Trusting that my explanation of this excellent device may do some good in the future, if so, I shall feel amply repaid. Yours respectfully, LIFEBOAT.

OBITUARY.

JOHN ERICSSON.

The famous engineer, Captain John Ericsson, died at his home in New York, on the 8th inst., at the ripe old age of nearly 86 years, having been born July 31, 1803. Few men in this age of progress have been so fruitful in ingenious inventions, many of which have effected permanent advances in the engineering art, and few men in any age have shown such a disinterested self-sacrificing devotion to science.

An invention in every way as remarkable as the machinery of war is his sun motor engine, a discovery Captain Ericsson employed some twenty years in perfecting, determining the mechanical energy that the great luminary has in store for mankind when the cornfields become exhausted. The motor furnishes a steady and reliable power under ordinary sunshine. It requires no fire, and consequently no fuel. The sun shines upon it, and the engine moves. The more sunshine there is the greater the force of the motion, and by storing up and utilizing this force the motor should, ultimately perfected, be able to drag along a train of cars as easily as one can take a photograph.

Among the many other inventions he has given to the world are a file-cutting machine, an instrument for taking soundings, the artificial draught for steam boilers, a hydrostatic weighing machine, a salt making apparatus, a rotary steam engine, the device for condensing steam and returning the water to the boiler, the link motion for reversing steam engines, the use of superheated steam, a locomotive engine (among the first offered), a caloric engine, and an alarm barometer. His contributions to the centennial exposition require a volume of 600 quarto pages in their description. His scientific investigations include many valuable astronomical discoveries.

Captain Ericsson came to the United States in 1839, and in 1841 became engaged with Commodore Stockton in building the United States steam frigate Princeton, said to be the first successful propeller war vessel with all its machinery under the water line. In France Captain Ericsson is called the father of screw propulsion applied to war vessels, as he designed the Pomone, the first screw vessel in the French navy. In 1837 he built a vessel having twin screw propellers.

Undoubtedly the greatest of all Captain Ericsson's achievements, however, and the one by which his name has become most widely known, was the building of the Monitor in 1862, at the Continental Iron Works New York, under the supervision of Mr. Thomas F. Rowlands the proprietor, in the incredible short time of ninety days a fact which many of our contemporaries have lost sight of. This iron gunboat, almost submerged, and with revolving turrets for the guns, was so successful in the now historic naval engagement at Hampton Roads, early in 1862, that the combat marked an epoch in modern warfare on the sea, and changed the course of naval construction throughout the world. Immediately following the day on which the Monitor drove the Merrimac, disabled, back to Norfolk, all maritime nations began the policy of building armored ships, which, with many changes, has since been pursued.

Captain Ericson's manners were simple and dignified, but without assumption, and he impressed every one with whom he came in contact by his broad views and rich stores of learning.

CAPTAIN P. M'LAUGHLIN.

Oakville lost a respected member of its community by the death of Captain P. McLaughlin, which took place on Thursday last, after a very brief illness. The deceased was formerly a captain on the lakes, and was well known and highly thought of by seamen on both upper and lower waters. He was a native of the county Antrim, Ireland, whence he came to Oakville in 1853, where he continued to reside till his death. Mr. McLaughlin was a man of strong convictions and determined character, and although many years had passed since he had seen his native land, he was still an ardent and enthusiastic Irishman. The funeral took place on Saturday morning to the R. C. cemetery, Oakville, and the large number present testified to the esteem in which the deceased was held by his fellow-townsmen. He leaves a widow and two daughters to mourn the loss of a kind husband and indulgent father.

REAR-ADMIRAL JOHN LEE DAVIS.

Rear-Admiral John Lee Davis of the Navy, retired, died at eleven o'clock on the 12th at the Ebbitt house in this city of a complication of deseases.

He was born on September 3, 1825, and saw 27 years of sea service after entering the navy as a midshipman in 1841. He was retired on his 62d birthday, September 3, 1887, under the age clause of the retiring act. Admiral Davis's last cruise ended in November, 1886, when he returned to this country from the command of the Asiatic squadron.

CAPTAIN GEO. W. FIELD.

Captain George Field, who has been connected with the vessel business of Ashtabula Harbor for a number of years, died at his residence there Sunday morning after an illness of about three months. The funeral took place last Wednesday. Captain Field was well known to vessel men all over the lakes. He owned the harbor tugs at Ashtabula. Deceased was about 70 years of age.

CAPTAIN E. W. PARSONS

for forty years a familiar figure in marine circles at Detroit and Port Huron, died at his home on Ontario street last Thursday evening, aged 59 years. Captain Parsons was born in Berkshire county, Mass., Febuary 8th, 1830. His parents removed to Michigan three years later, locating at Monroe, where they lived until 1841, when they removed to Gibraltar, Wayne county, where the young man lived until 18 years of age, when he began sailing on the steamer John Hollister. Since that date he has been connected with the marine service almost continually in various capacities to master. In later years Captain Parsons has been clerk on well-known steamers for nine years upon the Milton D. Ward and since the steamer Darius Cole came out he has had the management of the same. Last July Mr. Parsons was taken ill, but did not resign his position, and a few weeks later was able to resume his duties. He was seriously ill in January last, but again rallied and was about town considerably during the month of February. Last Saturday he was again stricken down, this time the neuralgia, which had so long made life miserable, going to his heart. Thursday morning he was thought to be dying, but continued to live through the day until about 8 o'clock when he breathed his last. He leaves a lovable wife, with whom he has lived happily over 35 years, and three sons, Frank W., of Chicago, Geo. P., present city clerk, and Fred. C., proprietor of the Troy laundry. The deceased sustained an enviable reputation for honesty and integrity through long years of large responsibilities. He was a popular and obliging gentleman, and will be greatly missed by his employer and a large circle of friends.

164,645 TONNAGE.

The work of preparing for next season's business on the lakes has begun in the office of Collector of Customs W. J. McKinnie, and through the kindness of Mr. Herbert L. Melton, of that office, having given us some interesting figures which indicate the wonderful growth in the lake business. With the opening of navigation twenty-eight big boats, which were not enrolled here last season, will be added to the Cleveland fleet. This increase in tonnage will place Cleveland far out of reach of all other ports on the lakes, and the boats are the largest and finest now sailing fresh water, most of them ranging in price from $100,000 to $300,000. Some Cleveland people are of course interested in vessels hailing from other ports and a few outsiders hold interest here, but this matters not as the division is about equal.

According to the records of the custom house when navigation opens in the spring, 242 boats with a gross tonnage of 164,644.56 will be enrolled here and from figures recently taken from Lloyds register an approximate estimate of value of this immense amount of floating property places it at close to $10,000,000. These figures are not startling when it is known that for three years past the shipyards of the lakes have been turning out from $6,000,000 to $8,000,000 worth of new boats each year, with Cleveland's share of the work ranging from $2,000,000 to $3,500,000.

In order to show the great increase in the Cleveland fleet within the past three years, and with a view of comparing the interests for ten years past, the following table is presented:

CLEVELAND'S FLEET.

Years.	Number of boats.	Gross Tonnage.
1879	184	62,437.50
1880	178	63,980.85
1881	174	73,138.90
1882	177	75,084.40
1883	188	80,104.42
1884	180	70,663.21
1885	185	91,413.79
1886	188	95,161.04
1887	196	156,172.71
1888	214	136,863.64
1889	242	164,644.56

The gross tonnage as shown in the above table falls far short of representing the carrying capacity of the fleet, especially with reference to latter years when single boats are made to carry nearly 3,000 net tons. This gross tonnage shows the measurement of the boats as recorded by the government. It would have been better probably to present the net or registered tonnage as now required by the government, but the enactment which caused this change has only been in force about five years, and for this reason a fair comparison could not have been made.

Of the 242 boats now owned here, 110 depend onsail, 116 are wooden steamers, 9 iron steamers 3 barges and four pleasure yachts. It is interesting to compare this division of 113 sail boats and 129 steamboats with the first of theten years, 1879, when 128 sail boats, and but 56 small steamboats were owned here. Monster carriers with plenty of steam propelling power are surely taking the place of the slow sailing crafts of the past years. Since December 1st ninety transfers, making necessary the redoeumenting of over seventy vessels, have taken place here.—*Plain Dealer.*

LAKE CARRIERS' ASSOCIATION

TO CONSIDER AND TAKE ACTION UPON ALL GENERAL QUESTIONS RELATING TO THE NAVIGATION AND CARRYING BUSINESS OF THE GREAT LAKES AND THE WATERS TRIBUTARY THERETO, WITH THE INTENT TO IMPROVE THE CHARACTER OF THE SERVICE RENDERED TO THE PUBLIC TO PROTECT THE COMMON INTEREST OF LAKE CARRIERS AND PROMOTE THEIR GENERAL WELFARE.

BOARD OF MANAGERS, 1888.

THOMAS MARTIN	Oswego, N. Y.
JAMES ASH	Buffalo, N. Y.
W. BULLARD	Buffalo, N. Y.
S. D. CALDWELL, President	Buffalo, N. Y.
E. T. EVANS	Buffalo, N. Y.
W. P. HENRY	Buffalo, N. Y.
P. P. MILLER	Buffalo, N. Y.
FRANK J. FIRTH, Vice President	Erie, Pa.
M. A. BRADLEY	Cleveland, O.
H. M. HANNA	Cleveland, O.
THOMAS WILSON, Vice President	Cleveland, O.
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P. P. MILLER, Vice President	Buffalo, N. Y.
EBEN WARD	Detroit, Mich.
JAMES DAVIDSON	Bay City, Mich.
JOS. AUSTRIAN	Chicago, Ill.
W. M. EGAN	Chicago, Ill.
IRA H. OWEN, Vice President	Chicago, Ill.
R. P. FITZGERALD	Milwaukee, Wis.
DAVID VANCE	Milwaukee, Wis.
ALEX MCDOUGALL	Duluth, Minn.
FREDERICK ALMY, Secretary	Buffalo, N. Y.
JAS. CAREY EVANS, Treasurer	Buffalo, N. Y.

MARINE RECORD—OFFICAL PAPER.

RENEWED LICENSES ISSUED.

The following is a list of the licenses renewed by the local inspectors at Cleveland, Ohio, since January 1, 1889.

MASTERS.

Joseph Kendrick,	Thomas Jones,
Henry Brock,	Robert W. Kerr,
Charles H. Wallace,	Daniel N. Ingrams,
John D. Mullen,	William W. Morse,
George Bartholomew,	William H. Cowan,

FIRST-CLASS PILOTS.

George E. Leggitt,	Peter Murphy,
Joseph A. Sweeney,	Andrew Teasel,
Henry D. Ingram,	William H. Blatner,
Edwin H. French,	William H. Lent,
S. Carlos,	Ransom Blood,
Andros Snell.	

SECOND-CLASS PILOTS.

William F. Colley.

SPECIAL ENGINEERS.

Charles R. Price,	Andrew M. McDonald,
John Kennedy,	William Saunderson,
Richard Masten,	James W. Twohig,
William A. Lloyd.	

ASSISTANT ENGINEERS.

Frank J. Randall,	Henry Crandall,
James S. Law,	James S. Felt,
Fred Bremer,	Adolph Hauck,
Charles Sterling,	John W. Mackenzie

The names of the successful candidates who have passed the local inspector's examination at Cleveland, Ohio, since March 1, are Geo. P. Leon, master; Charles A. Benham, Samuel C. Allen, Cornelius R. Baker, first-class pilots; Jesse Brooks, George A. Normand, second-class pilots; John B. Marshall, assistant engineer.

THE Ontario Inland Marine Mutual insurance association bill is announced by the Toronto dailies to have been read a third time on Monday and passed. The promoters have not got free from the obligation to give the trifling security required by their government, but, though they may not think so, we are of the opinion that the obligation is a reasonable, and beneficial one. Another important change we have to notice, is that the benefits of the measure are to be confined to Ontario vessels, only, and this will be a disappointment to many of our owners. It would appear as if our vessel men had lost any chance they might have had of going hand in hand with the Canadians, by the simple process of not looking after it. We should have been better pleased if our people had, either taken up the movement themselves, or had in the interests of the lake shipping, independent of nationality, supported their neighbors. The Canadian tonnage is nowhere compared with ours, nor have they anything like the number of magnificent propellers we possess, yet, in this, by no means unimportant matter, they are showing far more energy than is usually credited to their account.

IT IS to be said of Secretary Whitney that in the internal management of the affairs of the navy his administration has been pre-eminently business-like. He has reformed glaring and long-standing abuses; he has simplified the workings of the various branches of the department, has brought system out of what was in many respects very like chaos has made extravagance less easy, and in general promoted such economy that he was able in his last annual report to make the surprising announcement that the cost of all the vessels ordered had been saved out of the running expences of the department; while it is also to be said that no scandals have disgraced the navy department in the past four years, and there has been a sensible diminution of those grievances in the navy itself which in some past periods have made the officers feel by turn outraged and indignant.—*Providence Journal.*

The paper read by Capt. W. W. Bates of the Inland Lloyds before the Shipping and Industrial League at its session in Washington, has been published in pamphlet form. It advocates a return to the system of discriminating dues and duties in vogue before the enactment of the tariff laws of 1828, after which the percentage of foreigh goods carried in American bottoms rapidly declined. The custom was somewhat similar to that adopted by Canada last season in refunding the canal tolls to all vessels that discharged at Montreal. But this latter move was about nullified by the increased cargo rates to Montreal imposed by the Chicago underwriters. Capt. Bates holds that the throwing off of a certain amount of duty and port charges from American vessels would restore our lost prestige on the ocean. He is confident that the next congress can be made to understand this and that laws will be enacted accordingly.

CONSIDERABLE activity is evidenced in the recent movements of the traffic of the Canadian Pacific railroad across the continent, and in the connections which are now in process of formation for securing franchise at important lake ports. The subsidized lines of British steamers already engaged in the trade of the North Pacific form a connecting link between the eastern world and this country, which, if allowe d to grow unchecked by competition, will soon assume formidable proportions and require a strong effort on the part of the United States commerce to overcome. Hence, no time should be lost in establishing fast lines of steamers under the American flag to supply the existing trans-continental railroads with a fair balance of the important trade, which will eventually find its way across the continent.

A DEPUTATION representing the boards of trade of Montreal, Toronto, Kingston, Hamilton, St. Catherines, Port Arthur and Winnipeg has petitioned the dominion officials for a reduction of canal tolls during the coming season. They point out that it is highly desirable and necessary that these tolls should be reduced this year, the same as had been done for the past two seasons, in order to keep the traffic of the St. Lawrence route from being diverted to the Erie canal route. They also wanted information as to the enlargement of the canal system of the dominion, asking expedition. The premier gave them no promises, but said he would reply in a few days.

THE list of merchant vessels built on the great lakes to which official numbers were assigned by the bureau of navigation, treasury department, during the week ending March 16, 1889, are as follows: Steam. Charles H. Auger, Grand Haven, Mich., official number 106,540, tonnage, gross, 25.53, net 13.34. Edward Watkins, Chicago, Ill., official number 136,032, tonnage, gross, 20.21, net 10.17. News Boy, Port Huron, Mich., official number 130,432, tonnage, gross, 199.50, net 112.90. John E. Hall, Milwaukee. Wis., official number 76,790, tonnage, gross, 343.14, net 279.27. Sail, Mary A. McGregor, Grand Haven, Mich., official number 92,075, tonnage, gross, 617.56, net 600.33.

DURING the month of February there were nine vessels launched on the Clyde. The tonnage was very much above the average, being over 17,000 tons, which is more than in any corresponding month since 1884. Three of the vessels are of 3,000 tons each, or above. A few orders have been booked, but not so many as in some recent months. There are thus indications that the flush of orders for merchant vessels is begining to pass away on the Clyde.

GENERAL KLEIN was the head of King Mataafa's army, and therefore general of the soldiers who lately killed in Samoa seventeen German sailors and wounded thirty-nine. It was never denied that Klein is himself a German. It is now certain that he is a deserter from the German army, having fled the country in 1876. He is a native of the Grand Duchy of Baden, and fought in the Franco-German war.

THE government has issued a neat little pocket manuel of instructions to mariners in case of shipwreck, together with information concerning the life-saving stations on the coasts of the United States. The books are furnished captains and officers of steam and sailing vessels.

MEETING OF THE BOARD OF ENGINEERS POSTPONED.

DETROIT, MICH. March 16.

To the Editor of the Marine Record.

I have to inform you that, by direction of the Secretary of War, the date for the meeting of the Board of Engineers appointed to "investigate and report upon the practicability and necessity of a bridge across the Detroit River," has been postponed to May 1, 1889.

Very Respectfully,

O. M. POE.

Colonel of Engineers, Bvt. Brig. Gen., U.S.A.

A NEW OCEAN FLEET.

The Philadelphia *Evening Telegraph* says th at the report that a stock company has been formed, with $10,000,000 of capital, to build six mammoth ocean steamers in America and sail them under the American flag between New York and Liverpool, has been confirmed. President Corbin, of the Philadelphia & Reading Railroad Company, is the active mover in the enterprise. The vessels are to sail from Montauk Point, L. I., and the passengers will be transferred to and from New York City by rail, thus gaining about twelve hours on the time it takes an ocean steamer to sail up the bay from Sandy Hook. The vessels will cost $1,250,000 each, and are to be built on a parallel with the new Inman vessels and the Cunarders. The projectors of the enterprise look to Congress for a subsidy in addition to carrying the mails.

The Swedish government will probably send a man-of-war to carry Captain Ericsson's body to his native land. It is said that the property which he left does not exceed $100,000, including as the only piece of real estate the home in which he died. But the Captain had a hundred patents, and the royalty rights on most of them have years to run. He left a number of nephews and nieces, but t is understood that the three sons of his brother, Baron Ericsson, will receive the greater part of the estate.

AROUND THE LAKES.

[CONTINUED FROM PAGE 1.]

PORT HURON, MICH.

Special to the Marine Record.

The Phœnix Iron works are full of work compounding the engine of the steambarge S. C. Clark, also the engine of the steambarge Westford, and supplying her with a new bed plate, and new boiler 8½ diameter. 14 feet long. Compounding the engine of the tug Admiral Porter, and doing general repairs on her machinery and boiler. Building steeple compound engine 12 and 21 by 16, and boilers 6 by 10 for the steamer, formerly the E. M. Foster, being rebuilt at R. Holland's ship yard, Marine City. Building a fore and aft compound engine 25 and 50 by 40, and boiler 11 feet 4 inches by 16, for Curtis & Brainard's new steam barge building at Marine City, and doing general repairs on the engines and boilers of the steamers C. H. Green, Tempest, Dean Richmond, Fred McBrier, Geo. L. Colwell and Miami.

Carleton and Cole have placed a No. 8 Worthington condenser in the saw mill of Fletcher, Pack & Co., lumber merchants, Alpena. A large Worthington pump at the Au Sable lumber company's saw mill, also one at Penoyar Brothers' mill, Au Sable. Supplied two Worthington pumps to F. W. Wheeler, Shipbuilder, Bay City. A. R. Cole, of the above firm, returned last week from a journey to several towns along the east shore of Lake Huron, going as far north as Alpepena. He found business rushing and every thing tending towards an early opening, there being no ice to prevent navigation commencing at once.

There is just completed at the Phœnix Iron works, a splendid built Scotch type boiler 7 feet 6 inches by 9 feet, 145 pounds steam pressure, for Gilchrist & Fletcher, Alpena, to be placed on their steam yacht Hinda, which has been built from plans and specifications furnished by A. R. Cole of the firm of Carleton and Cole. It is the intention of the owners of the Hinda, to have her put in first class condition. The two Franks never do anything by halves,

J. H. Fitzgerald's dry dock iron works are very busy and have been all the winter, fixing up marine engines and machinery..

Love and Schofield, Pioneer boiler works are very busy, building a boiler 9 by 16 for the tug Castle, and doing considerable work on the boilers of the tug Kitty Smoke, steamer A. J. Wright, and on the boiler of a steambarge owned by Thompson Brothers St. Clair.

Captain C. D. Jones, formerly of the steamer James Beard will command the steam barge Mary Groh the coming season.

Captain Rardon was here Saturday on business connected with the steamers Osceola and Colorado.

Caption Geo. McCullagh, who will command the Colorado, arrived here Saturday, to look after the repairs to be done on her, rendered necessary in consequence of the fire on board of her about a month ago.

Captain Dan McLeod was here Friday and Saturday inspecting various vessels and steamers on behalf of the Inland Lloyds.

The ferry steamer Grace Dormer, has had a thorough rebuild and a new boiler, and commenced running between this port and Sarnia this week.

H. N. Jex is rebuilding the steambarge Laketon. WILLIAMS.

The Beatty line of steamers are fitting out.

Chas. D. Thomson of this city, has purchased the tug Geo E. Brockway from Luddington parties, for $7,500. The Brockway was formerly a river tug; she was built at Port Huron in 1867. He will use her to tow on the river.

Dunford and Alverson expect to begin operations on their large dry dry dock very soon.

There is no ice in Black river at this port.

The tow barges Wm. Young, and Magnet are receiving a good overhauling, at Brooks & Joyslin's dock.

The steambarge Geo. L. Colwell, will go into the Wolverine dry dock for large repairs.

Captain Harry Durant, of the opium smuggling fame, will remain in Victoria, B. C., for the present.

James H. Keranhan, the popular steward, leaves for Detroit Saturday to look after fitting out of the river steamer Cole.

Light house keeper Palmer, and his assistant, Corrigan, of Fort Gratiot light, are getting things in shape for the coming season.

The ice bridge at the mouth of the river is broken, and the river is full of floating ice.

Martin Mullen, the coal dealer of Cleveland, was in this city last week on business.

The work on the tunnel under St. Clair river at this port, is getting along nicely. There is a night and day crew working now, and the company intends rushing it through. No bridge for us.

The tug Porter and schooner Ida Coining, came out of Dunford & Alverson's dry dock Wednesday, in first class shape. The Porter received a new house, stern, and other repairs. She is now a very fine looking tug.

The tug Kittie Haight is receiving large repairs to her boiler.

The tug Geo. R. Hand of Lynn's line will be ready for business in two weeks.

Charles D. Thomson and others of this city have sold to Captain B. B. Inman of Duluth the tug O. W. Cheney for $6,500. Captain Inman will take the Cheney to Duluth as soon as the season opens.

Captain F. S Gill and others of this city have purchased from W. W. Tyler and others of Buffalo, the steam barge H. D. Coffinberry for $35,000. The Coffinberry was built in 1874, rates A 2 and is valued in Lloyds at $45,000. Captain Gill will command her the coming season.

Captain Robinson, of the steamer Cole, was in the city and says that the Star-Cole line will have a boat on the Detroit and Por Huron route very soon after April 1st. He says the ice in Lake St. Clair is light and rotten.

Vessel owners here predict an early opening of navigation this season.

James G. McCrea, of Sarnia, will give free, a site for a first class dry dock and ship yard in the bay, and he will give a reasonable amount of stock in the company to be formed in Sarnia to conduct such an enterprise.

The ferry boats here have not experienced any trouble in crossing the river this winter.

The burned propeller Colorado, was towed to the Wolverine dock last Thursday by the ferry Conger. The Colorado will receive new decks, railing. ceiling, bulwarks, cabin, pilot house and other repairs. She will be in first class condition when navigation opens.

The G. T. R. R., are repairing their big dock at Point Edwards.

The steambarge Westford, is receivsng a new boiler at the Phœnix iron works. She is also having her engine stseple compounded at the same shop. Robert Close is superintending the work.

Dunford & Alverson are receiving a large quantity of oak timber for the new dry dock down the river.

Captain Hebner is smiling over the arrival of a first mate for the City of Concord, at his residence. Both mother and baby are well.

The narrow bridge of very thin ice at this end of Lake Huron, is all that is perceptible from Fort Gratiot light, clear blue water appearing beyond as far as the eye can reach. Fisherman up the shore all say that the ice is very thin and is honey-combed.

Captain B. B. Inman, of Duluth, was in this city looking after tugs for his lines.

Captain Madden and engineer Odett left for Chicago to fit out the steam barge Ida Tarrent.

The river steamer Mary, commenced regular trips last week between this port and Algonac.

Mr. Howard, the tug owner, arrived home from California Tuesday, looking fine.

Lynn, the marine reporter, is having his office refitted in first class shape.

It is reported that Captain Rice will move his family here from Detroit. ISIS.

BUFFALO, N. Y.

As the time for the opening of navigation approaches it becomes of interest to know the coal-carrying capacity of the fleet wintering in port, and accordingly a list has been made. The following vessels may be generally relied on to load coal the first trip: Propellers—Russia, Lackawanna, Scranton, Grand Traverse, H. E. Packer, Saginaw Valley, Nebraska, H. D. Coffinberry, Northerner, Nevada, Oregon, J. B. Lyon, A. P. Wright Araxes, W. H. Barnum, T. W. Palmer, (now known as the Samoa), Calumet, P. P. Pratt, Robert Mills, Cuba, St. Louis, (already loaded), J. C. Pringle, S. E. Peck, D. M. Wilson, Hiawatha, Elfinmere, Sitka, Wallula, Missoula, Spokane, Tom Adams, J. P. Donaldson, Northern King, Bulgaria, Australasia, Roumania, Gladstone, City of Cleveland, Cormorant, W. B. Morley, J. H. Prentice, May Durr, R. F. Fitzgerald, Otego, Germanic. Schooners and barges—J. D. Sawyer, Annie Vought, Potomac (all loaded), Uranus, Planet, Wenona, Sweetheart, Sunshine, D. Vance, American Giant, L. W. Drake, A. M. Ash, J. M. Hutchinson, C. B. Jones, F. B. Gardner, Geo. Clinton, M. I. Wilcox, John Breden, Donaldson, Brightie, A. M. Petesson, John Martin, Fayeytte Brown, Goshawk, A. A. Carpenter, G. W. Adams, Hattie Wells, C. P. Minch, Halstead, Montgomery, Monticello, E. R. Williams, Geo. C. Finney, Reindeer, Guiding Star. This list of about 80 vessels gives an even 100,000 tons of capacity. There is also a list of about 16 line propellers that will carry coal on the first trip to make up for any lack of package freight. They are the New York, Rochester, H. J. Jewett, Owego, Chemung, Philadelphia, Lycoming, Juniata, Clarion, Arabia, Montana, Hudson, Syracuse, Waverly, Newburgh, Wyoming. But few of these will carry full loads of coal, the average being perhaps 1,500 tons, giving a total of 24,000 tons. It is the rule that something like half of these load coal. Then there is a list of lumber carriers that will carry coal only when there is no hurry in the lumber trade. They are propellers Passaic and Belle P. Cross and their tows of four barges each. They rarely carry coal at all, but could load a matter of 5,000 tons if they chose.

It appears that Captain James Hannett did not go to Duluth as was reported. He states that he is, however, to sail the tug Record of Duluth as soon as Captain Inman is ready for him.

The barge John Breden has been sold by Thomas Maytham and others to Comstock & Co. of Alpena.

The barges Bliss, Cahoon, and Corning, which used to tow with the Porter Chamberlin but were with the Tempest last season, will tow with the Oscoda this season.

The Lackawanna line has again leased the propeller Northener, and is negotiating for the Wyoming.

CHICAGO, ILL.

The admiralty claim of M. A. Bradley against the propeller John Pridgeon, Jr., was decided at Chicago by Judge Blodgett in favor of the libellant. By a collision with the propeller Selah Chamberlain, which occurred off Sheboygan, Wis., October 13, 1886, the Chamberlain was sunk and proved a total loss. The court held that the Pridgeon was solely at fault in not having a proper look-out, and because the master did not stop and back the steamer when the Chamberlain hove in sight. The court limited the liability of the Pridgeon to $37,500. This amount her owners will probably have to pay. An appeal was taken to the United States Supreme court.

TOLEDO, OHIO.

Sullivan & Hubbard, Toledo, have made the following appointments for the coming season: Steamer G. G. Hadley, Captain D. H. Mallory, Chief Engineer Maginus. Steamer Monnahansett, Captain H. Donaldson, Chief Engineer Wm. Decker. Schooner Massasoit, Captain O. M. Ketcham. Schooner C. C. Baures, Captain E. Winchester. Schooner Penokee, Captain D. Benson. Schooner John Schuette, Captain J. M. Woods. Tug Roy, Captain James McKinley, Engineer Robert Hall. Tug A. Andrews, jr., Captain Ed. Williams, Engineer William England. Tug M. A. Green, Captain Charles Sherberne, Engineer C. Ranaur. Tug Syracuse, Captain James Sheldon, Engineer H. Sullivan. Tug Wm. Rooney, Captain Wm. J. Seaver, Engineer Ernest Roe. S. & H.

FREIGHT OUTLOOK.

There is rather a quiet tone pervading the brokers, and vesselmen's offices at this writing, and no new developments can be reported. Large blocks of ore are offered all round, with no takers, and as the vessel interests are firm, there is no doubt but that ore shippers will be obliged to advance their present figures, $1.10 for Escanaba to Lake Erie ports is quoted as going a begging, and no season charters are likely to be made on this basis. There is no hiding the facts that six to seven million tons of ore must come forward this season, and with the large quantities of grain in sight, vessel men are perfectly easy on the situation, and are quite willing to await better terms. When shippers realize that the movement of large quantities of ore can not be entrusted to boats running wild, they will endeavor to place charters. It is thought that the recent sale of half million tons of ore will not affect the opening rates and such is the outlook at present.

FORE AND AFT.

On the opening of navigation the Saginaw shipyards will send out eighteen new craft of all kinds.

The tolls through the St. Lawrence and Welland canals will be two cents a ton, the same as last year.

The hull of the steamer Lake Ontario, which burned and sunk at Charlotte, last fall, has been raised and will be rebuilt.

The Lake Michigan steam lumber fleet is fitting out and will begin business about April 1st, when marine insurance begins.

A judgment of $6,717 has been rendered against the British-American Assurance company for lumber lost with the barge R. N. Rice last fall.

The 150,000 feet of lumber lost from the barge Banner last fall at Potts Point, Lake Huron, has been recovered, more or less damaged.

At Erie the Anchor Line steamers Alaska, Gordon, Campbell, and Susquehanna are undergoing repairs. Repairs are also being made upon the schooner Frank W. Gifford.

The Saginaw Courier says: "The Hollister Brothers' lumber company, limited, is the name of a firm recently organized, with a capital stock of $450,000. The stockholders are the Hollister Brothers of Rochester N. Y., and E. Hallenbeck and W. H. Gilbert of this city. The latter gentleman is secretary. The new company purchased Hallenbeck's yard at Tonawanda, and will conduct a large business there, expecting to handle 50,000,000 feet of lumber annually, the bulk of which will be bought and shipped from Eastern Michigan. An office will be maintained here as well as at Tonawanda."

Messrs. Bassett, Presley & Train Iron and Steel warehouse report business in manufactured iron as being brisk with an excellent outlook in future orders.

Order Now.

BEESON'S SAILORS' HAND BOOK, EDITION OF 1889, WILL BE OUT MARCH 20.

It is an infallible guide to the twenty lake ports where Custom Houses are located, and a synopsis of Marine Law. Enclose 55 cents by Postal Note, or in stamps, and it will be mailed you promptly when out.

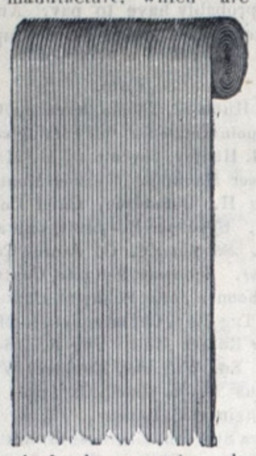
Address: H. C. BEESON, Care Detroit Custom House.

WANTED,

POSITION as second mate on a vessel, by a thorough seaman, last season on the D. P. Rhodes; also a position as stewardess. 28 Oregon street, Cleveland, Ohio.

SUPERIOR RUBBER MATS AND MATTING.

Of the numberless uses to which rubber has been put with great success, during the last twenty-five years, none have grown more prominent than that of its adoption for mechanical purposes, using it for a variety of manufactures, of which rubber belting, packing, hose, together with mats and matting are perhaps the most familiar to our readers. The New York Belting and Packing Co., warehouse and salesrooms, 15 Park Row, New York City, were among the first to foresee the great value of rubber in this field and today enjoy the distinction of being the oldest and largest manufacturers of vulcanized rubber goods for mechanical purpose, in the United States. They have acquired a national reputation for the variety and high quality of their manufacture, which are eagerly



sought after in foreign countries, where their great worth has been duly recognized and liberally encouraged. Coming nearer home, we find the demand for the belting, packing and other rubber specialties made by this firm, continually on the increase, year by year, from all sections of the country. The chief features which attach to all their goods, taken collectively, are strength, durability and perfect finish, which are particularly noticeable in the celebrated corrugated and perforated mats, matting and stair-treads, of their manufacture. These goods when in use prevent slipping and consequent danger to life and limb, keep the halls or other flooring covered, clean, and add to the attractiveness of the premises, beside preventing wear. They are noiseless when trodden upon and quite indispensable in wintry weather for exposure to ice, snow, wind or slush. Just the thing for steamboat use on decks and companionways. Many of the large trans-atlantic steamships employ them to their advantage, beside a large number of our lake and

river steamers, who find them quite necessary. These goods are much more attractive, cleanly and far more serviceable than any wooden or wire mat or matting manufactured. The New York Belting and Packing Co., have lately put upon the market, a new style rubber mat known as the "N. P. M." mat, which they furnish in two patterns, shown in engraving on this page. They will undoubtedly, become very popular for use on ship board, and in cabins and other apartments. Large numbers of them are already in use for office and household purposes. There is nothing more desirable to place before a desk or office entrance. In its manufacture this new mat is similar to the company's regular goods, but unlike them in the fact of their being thinner, a characteristic, which commends itself to those who have been bothered by the interference of the threshold and door mat.

This new style is not as high as the average threshold so the door can easily swing over it. The manufacturers make these "N. P. M" mats with or without name or initials of vessels, on which they may be used, worked in the centre, as desired. The name or the initials being worked in the mat, prevents its sale if stolen, and does not detract from its attractive appearance. M. A. B.

RUSSIAN PETROLEUM.

M. De Tchihatchef, a Russian writer, asserts that the average flow of petroleum in the Baku region is 88,000 barrels per day, as against 25,300 barrels in the United States. The chief drawbacks encountered by those who have worked the Baku oil fields have been lack of transportation and want of cheap package. A railway to Batoum, on the Black sea, opened two maritime routes to Europe, and met the first difficulty. Cars and vessels constructed to carry crude oil met the last, and enabled refineries to be built in the interior of the empire wherever fuel might be the cheapest. It is confidently predicted, since the completion of the Batoum railway, that Russian oil will displace American in European markets, and that it will even be possible for the Russian product to compete for the markets of the United States. M. De-Tchihatchef points out a probable demand in the near future for petroleum to serve as fuel on the great lines of railway completed and still building in Asia.—*Scientific American.*

Blue water is visible now only about a mile from the base of Minnesota Point, a wind yesterday evening breaking off and carrying down the lake a large floe of rotten ice. The open water channel from the canal now reaches full half way from shore to uninterrupted navigation, and a strong tug could get out to free sailing if there was need of it. In the bay open water extends from the canal to Sixth avenue west, and around the deep channels at the ends of Rice's and Grassy Points ice is very weak.

DIXON'S

GRAPHITE

PIPE JOINT GREASE

FOR STEAM OR GAS PIPES

makes a perfect joint that can be opened with ease in three years or thirty years. Bolts, screws, etc., smeared with this grease will not rust even in the dampest places. Write to Jos. Dixon Crucible Co Jersey City, N. J., for circulars.

J. C. COSS.

Sail Maker and Rigger,

20 and 22 Woodward Av.,

DETROIT - - MICH

LARGE STORAGE ACCOMMODATION FOR VESSEL OUTFITS.

Covering Boilers and Steam Pipes a Specialty

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SAIL MAKERS AND RIGGERS

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Wire Rope, Manilla, and Tarred Cordage, Canvas, Blocks, Oakum, Tar, Pitch, Oars, Anchors, Chains, etc.

116 & 119 RIVER ST., & 134 & 135 DOCK CLEVELAND, OHIO.

ERIE RAILWAY.

The favorite and picturesque route to New York, Boston, and the East. The shortest and quickest route to Pittsburg, Washington and Baltimore, and the southeast.

New Central Depot South Water st. and Viaduct.

Change of time goes into effect Dec. 23, 1888.

Central or ninetieth meridian time, 33 minutes slower than Cleveland city time.

Until further notice trains will leave from the new Central Depot, South Water street and Viaduct, as follows:

DEPART.

No. 62, Mahoning Valley Accom	† 6 00 a m
No. 72, New York Express	* 8 50 a m
No. 72, Fast Pittsburg Express	* 8 30 a m
No. 64, Pittsburg Express	* 3 00 p m
No. 66, Leavittsburg Accom	* 4 20 p m
No. 68, New York Express	†10 50 p m
No. 68, Pittsburg Express	†10 50 p m
No. 70, Pittsburg Local Express	†11 45 a m
No. 74 Youngstown	† 4 20 p m

ARRIVE.

No. 65, Fast New York Express	*12 50 p m
No. 61, Pittsburg Express	† 7 35 p m
No. 67, Pittsburg Express	*10 55 a m
No. 65, Pittsburg Express	†12 50 p m
No. 63, New York Express	* 6 50 p m
No. 63, Pittsburg Express	* 6 50 p m
No. 69, Pittsburg Local Express	† 8 10 p m
No. 13, Youngstown Local	† 5 25 p m

*Daily. †Daily except Sunday.

☞This is the only route by which passengers can reach Cory, Elmira, Binghampton, New York City, and intermediate points without change. No change to Boston and New England cities.

Baggage checked through to all points East.

Through tickets and information regarding the route can be obtained at office, 141 Superior street, and at depot Erie railroad, South Water street and Viaduct, Cleveland.

A. M. TUCKER, Gen. Supt., Cleveland.
L. P. FARMER, Gen. Pass. Agent, New York.
W. C. RINEARSON, A. G. P. A., Cleveland.
M. L. FOUTS, Passenger Ticket Agent, 141 Superior street, Weddell House, Cleveland.

Travelers' Information Bureau.

Ocean, Lake and Railroad

TICKET AGENTS

224 Bank St.,

CLEVELAND, O

M. M. GLEKLER,

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Cigars AND Tobacco.

156 River-st., Cleveland, Ohio

No one should leave port without a box of M. M. Glekler's marine cigars.

E. L. PARRISH,

Ship Chandler,

Sail & Awning Maker.

Sewell & Day's Boston Rope. Boston and Lockport Block Company's patent 5-roller Bushed Blocks.

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Cleveland Block Co.,

MANUFACTURERS OF

Iron Tackle Blocks

TAKING THE PLACE OF WOODEN BLOCKS FOR ALL PURPOSES.

159 St., CLEVELAND, O

GEO. RANDERSON & SON,

DEALERS IN ALL KINDS OF

FRESH AND SALT

MEATS

Vessel Orders Promptly Filled.

Telephone 1732. No. 236 Detroit Street,

CLEVELAND, O.

J. R. OLDHAM, C. E.,

Naval Architect,

Marine Inspector.

SPECIAL EXPERIENCE IN DESIGNING, PRICES SELF-TRIMMING HATCHES COAL SHUTES AND BLAKE'S PATENT BOILERS.

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BUFFALO, N. Y

C. E. BLACK,

Dealer in Standard Oil Co's.

CAPITAL CYLINDER OILS

—AND THE—

Finest grades of machine oils.

Sandusky. Ohio.

FOR SALE.

A STEAMBARGE OF 167 gross tons burden, built in the year 1886, and worked all the season since she was built, and has been kept in good order. She is now laying at the dock at or near Green Bay, Wis., and capable to do a good business. Will be sold cheap on account of the owner's time being fully occupied with other business. Enquire of. A. W. PRIEST, Kankauna, Ontagamicie Co., Wis.

FOR SALE.

THE FINE SAILING YACHT EMMA G., HER dimensions are, 35 feet overall, 29 feet waterline, and 13 feet beam. She is a smart sailer and well known in yachting circles. For particulars enquire of J. N. WAGNER, 489 St. Clair street, Cleveland, O.

FOR SALE.

BOILER AND ENGINE. Engine 12½ by 12, boiler 4½ by 11, allowed 90 pounds steam; shaft wheel, pumps, all in running order. Price, $700. Apply to CAPTAIN H. N. JEX, Port Huron, Mich.

FOR SALE.

HARBOR TUG for sale. Engine 18x20, boiler 5 feet 6 inches by 11 feet, and allowed 100 pounds of steam, and is A2, valued at $5,500 by Lloyd's register, but the owner will take $4,600 cash. For further particulars inquire at 113 Franklin avenue, Cleveland, O. CAPT. E. DAHLKE.

WANTED.

TUG.—A good towing tug, about 18x20 engine. Inquire of CAPT. E. S. SMITH. No. 30 Twelfth avenue, East Duluth, Minn.

HARBOR TUG FOR SALE.

THE TUG MYRTLE, of Sandusky, Ohio, for sale cheap. Is in first-class condition. For particulars write to FRED GROCH, Sandusky, O.

WANTED—TO BUY TWO TOW BARGES of about, 500,000 capacity, or two A 2 schooners. Address, CAPTAIN A. FLAGSTAD, Montague, Mich.

WANTED.

A GOOD MARINE ENGINE, 20x22, with or without boiler, etc, Address box 1, branch office Marine Record, 252 South Water st, Chicago, Ill.

WANTED.

SCHOONERS—20 to 40 tons, in good repair. Send full description and photo or drawing. Address, B. C. LINDLEY, Box 479. Traverse City, Mich.

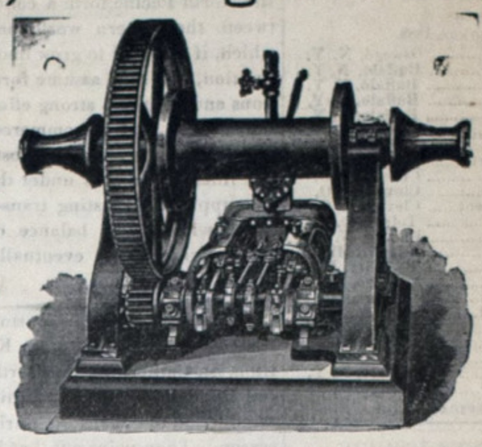
UNITED STATES ENGINEER OFFICE, Cleveland, O., Feb. 12, 1889.—Sealed separate proposals in duplicate, will be received at this office until 12 m., on Friday, March 15, 1889, and then opened, for dredging at the following harbors: At Monroe harbor, Mich.; at Toledo harbor, O.; at Port Clinton harbor, O.; at Sandusky harbor, O.; at Huron harbor, O.; at Black River harbor, O.; at Cleveland harbor, O.; at Fairport harbor, O.; at Ashtabula harbor, O. All information can be obtained at this office. The United States reserves the right to reject any or all proposals. Preferences will be given to materials and plant of domestic production or manufacture, conditions of quality and price (import duties included) being equal. The attention of bidders is invited to acts of Congress approved February 26, 1885, and February 23, 1887, vol. 23, page 332, and vol. 24, page 414, statutes at large. L. COOPER OVERMAN, Major of Engineers. feb 21-4

EAGLE IRON WORKS,

MANUFACTURERS OF

Duplex, Hoisting & Deck Engines

Specially adapted for Boat uses, Raising Sail, Hoisting Anchor, Pulling in Tow Line etc., etc.



Pumps with ten inch Barrels Connected to Gypsy Spools.

THE SIMPLEST AND BEST OFFERED—SATISFACTION GUARANTEED.

SUBMERGED FLUE BOILERS

Engines, Boilers and Pumps on Hand for Prompt Shipment

CIRCULARS AND PRICES ON APPLICATION.

Woodbridge, Fifth and Congress-sts, Detroit, Mich.

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MANUFACTURERS AND JOBBERS

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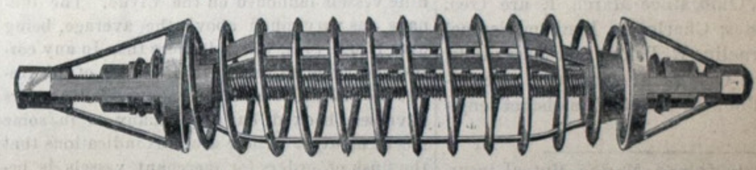
259 PEARL STREET

DETROIT SHEET METAL AND BRASS WORKS,

Marine Coppersmiths, Pipe Fitters and Metal Workers,

Manufacture and keep in stock the most approved designs in

Brass dead lights, all brass locks, spear heads, pilot house tops, whistles, motion indicators, windsails, head light frames and flue cleaners.



AGENTS FOR WORTHINGTON STEAM PUMPS.

WORKS 64 TO 72 ORLEANS ST., DETROIT, MICH.

FOR SALE.

THE SCHOONER-RIGGED SCOW KATE GRANT, carrying capacity 31 tons, dimensions, length 60 feet, beam 17 feet 9 inches, depth of hold 4 feet. This vessel is only one year old and cost $2,800 to build. She will be sold cheap for cash. For further particulars apply to CHARLES L. WINNE, Port Clinton, O.

FOR SALE.

BARGE B. M. BAKER for sale cheap for cash, or will exchange for real estate. This is a bargain. J. W. WESTCOTT, Detroit, Mich.

FOR SALE.

WANT AN OFFER for a marine boiler, in good condition, ready to use; dimensions, 8½ feet diameter and 18 feet long. CAPT. V. E. MEYERS, Manitowoc, Wis.

FOR SALE OR EXCHANGE.

FOR STEAMBARGE, A NEW PASSENGER steamer, will carry 75 tons freight, allowed 115 passengers. Will sell on easy terms or exchange for steam barge. Address, BOX 90. Petosky, Michigan.

FOR SALE.

MARINE ENGINE nearly new, includes bilge pump, hand pump and force pump, cylinder 17 by 20. Will sell cheap. Address, K. BOX, Record Office.

FOR SALE

TWO MARINE BOILERS 7 years old in good order for sale cheap, 9¼ feet shell by 16 feet long for $1,000 each, ⅓ down balance one year, by C. H. LANE, BUFFALO, N. Y.

FOR SALE.

PASSENGER PROPELLER GOLDEN EAGLE, Thoroughly over hauled this spring, "Sutton" Engine 14×14, 100 pounds steam, runs 14 miles an hour easily, and carrys 300 people. Owner has no reute for her and will sell for what she is worth. JAMES E. ENGLISH. East Saginaw, Mich.

FOR SALE.

TUG DREADNAUGHT is offered by the undersigned for sale cheap. She is in good condition, has double engines, and it is well known that the machinery is as good as can be made. The boilers are allowed 100 pounds of steam. Inquire of CAPTAIN THOMAS DOWLING, 248 Clinton st., Cleveland, O.

FOR SALE.

CENTER BOARD YACHT NORDEN, 42 feet keel, 15 feet beam, 5½ feet head room in cabin, can be arranged to accommodate twelve persons for cruising. Fast and staunch, cost $2,700 to build, will sell if purchased soon for $900. F. W. FINCHER, Pentwater, Mich.

FOR SALE.

SCHOONER FRANC MINER. Her dimensions are as follows: 68 feet keel, 17 feet beam, 5 feet hold, she has two masts and is three years old, in good shape, outfit and all. I also have a complete outfit for a tug or barge, engine 18 by 20, boiler 6½ by 14, shaft wheel and all complete. For particulars write to L. NAU, Green Bay, or CAPTAIN J. A. CUSICK, Fort Howard, Wis.

FOR SALE.

BARGE COL. BRACKET—She carries 260M feet of lumber, 420 tons of coal. Had $900 worth of repairs last season. Fit out good. Price $1,600. Mention this paper. ED. J. KENDALL, Port Huron.

FOR SALE.

BARGES LEADER AND JUNIPER, capacity 375,000 each. For price and terms inquire of N. MILLS & CO., Cleveland, Ohio.

FOR SALE.

STEAM BARGE PASSAIC, and four consorts. Capacity, 3,300 tons coal or 2,400,000 feet timber. Boat now laid up at Buffalo. For terms and price, inquire of J. M. JONES, 52 Griswold St., or C. C. BLODGETT, 242 Woodbridge St., Detroit, Michigan.

FOR SALE.

Two Tugs and Three Marine Boilers.

Tug Uncle Sam.

Length 60 feet, beam 14 feet, depth 7 feet, draft 8 feet, engine 17 by 17; steel boiler 12 feet long, 5 feet 4 inches diameter, of ⅜ths plate, allowed 100 pounds of steam. Hull rebuilt in 1887. Price $5000.

Tug J. C. Ingram,

Length 54 feet, beam 15 feet 6 inches, depth 7 feet, engine 17 by 18, boiler 10 feet long, 5½ feet diameter, of ⅜ths plate, allowed 90 pounds of steam. Rebuilt in 1885. Price $5000.

A Marine Steel Boiler,

17 feet long, 7 feet diameter, allowed 110 pounds of steam, 6 years old, in good condition; price $800.

A Marine Iron Boiler,

14 feet long, 7½ feet diameter, allowed 80 pounds of steam, in good repair; price $400.

Marine Iron Boiler,

14 feet long, 5½ feet diameter, allowed 90 pounds steam, in good condition; price $300.

Apply to DUNHAM TOWING & WRECKING CO., 234 South Water St., Chicago, Ill.

FOR SALE.

TUG BOAT, STEAM YACHT, &c.

—AT—

Bell's Steam Engine Works,

BUFFALO, N. Y.

1 new Wooden Tug, 76 feet long, 15½ feet beam; engine 18x20, steel boiler 6 ft. 8 in. by 10 ft. 9 in.

1 steel and iron Steam Yacht 85 feet long, 14 feet 4 inches beam; compound engine 9x18, 12 in. stroke, independent condenser, with boiler all complete.

1 wooden steam yacht, "Little Mac," 60 feet long, 10½ feet beam; engine 8x9, Scotch steel boiler, 2 masts, and furnished all complete.

1 marine engine 20x22.
1 marine engine 14x16.
1 marine engine 14x14.

Apply as above. January, 1889.

SAMUEL McCUTCHEON,

STEAMBOAT & ENGINEERS' SUPPLIES

Copper, Brass and Sheet Iron Manufactory.

IRON PIPE AND FITTINGS.

Agent for Davidson's Steam Pumps, Amazon Boiler Compound, and Orme Patent Safety and Relief Valve.

No. 18 Ohio Street, Buffalo, N. Y.

BELFAST AIMS AT RIVALING THE CLYDE.

The Teutonic, which has been lately launched at Belfast for the White Star line, marks an undertaking that aims at more that the supplying of a new ship to an old established fleet. It aims at drawing to Belfast the distinction—so long enjoyed by the Clyde—of building the biggest and fastest ships in the world. The struggle is a hot one. Messrs. Harland, who have launched the Teutonic, and are building a sister vessel for the same company, have pledged themselves to beat the record on both points. Sir Edward Harland, the chief constructor of the firm in question—so runs the local legend—has almost slept in his yard, the vessel being built up under his personal supervision. On more than one occasion the work was stopped and partly undone in order to give effect to a new idea. Very frequently, the draughtsmen, on going in at six in the morning, found their chief there before them. Sir William Pearce built the biggest and fastest steamers on the Clyde; Sir Edward Harland has pratically pledged himself to beat Sir William Pearce. But it is not always the rule with a great ship to reach her maximum of speed upon her first voyage. The tendency of a very large steamer, as I learn from the expert, is to train her up to her highest pace. The Umbria and the Etruria, built by Sir William Pearce, certainly went away at their best on their first voyage, but the Alaska took six months to make fast time. The Oregon had not done her best when she foundered. Another case in point is presented by the at present biggest ship afloat—the City of New York—also built by Pearce, which is improving her pace with each voyage. No doubt Sir Edward Harland is aware of these peculiarities, and will endeavor to provide for them.

THE NICARAGUA CANAL.

The plan adopted by engineer Menocal provides for a breakwater at Greytown; dredging from thence inland in a westerly direction for the distance of ten and a quarter miles, and then a lock of 31 feet lift. Ten miles beyond this spot will be a second lock of the double order, having a combined lift equal to 75 feet, and a dam across the small river Deseado, above which are four miles of free navigation. Then comes a rock cut of three miles in length and twelve miles of free navigation in the valleys of the San Francisco and Machado rivers, in which the waters are to be raised above their present levels, by means of embankments, to four basins that will connect with the San Juan river, above a large dam across that stream. The dam will raise the level of the river surface and thus secure free navigation of sixty-four miles in the river and fifty-six and a half in the great lake of Nicaragua. On the western side of the lake occurs a cut of slight depth and eight and one half miles long, and the canal enters into the Tola Basin, which affords five and one half additional miles of free navigation by damming the Rio Grande. At this dam begins a series of locks having a combined elevating or lowering power of eighty-five feet. From the lowest one of these locks an excavation furnishes a bed for the waterway of about two miles to the last lock, which is a tidal one of from twenty to thirty feet lift. Below this point comes the harbor of Brito, one and a half miles from the Pacific. The entire work is estimated to cost $60,000,000, and the traffic which will await its opening, in 1893-94, is expected to reach 7,000,000 of tons.

DANGER OF BOILER INSPECTORS.

A very serious and even criminal piece of carelessness was recently reported to us by one of our inspectors. While he and two assistants were inside a battery of boilers making an examination, a man in the employ of the company owning the boilers opened a valve on an adjacent battery, and the steam and condensed water acting together crushed the valve on the boilers they were in. Their lives were saved by the presence of mind of the foreman, who saw what was the matter and closed the lower valve at once.

Not long since a similar incident happened to another inspector. He was in the last of a battery of cylindrical boilers, when some one turned on steam at the other end. Hearing the roar as the steam and water rushed into the boilers at the further end of the battery, he sprang to the man-hole and escaped just in time to save his life. Had he been a moment later or had the boiler been more complicated in construction so as to oblige him to crawl about between stays, he would inevitably have been scalded to death.

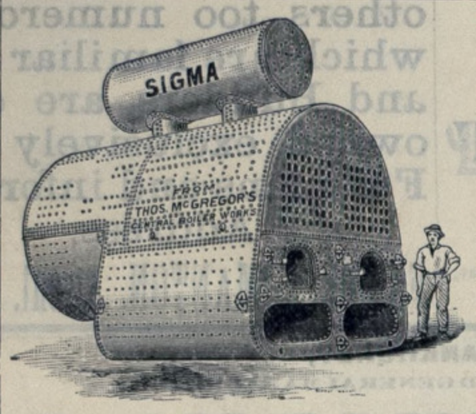
Carelessness of this kind cannot be too severely rebuked. It reflects not only on the man who does the mischief but also on the company that employs such a man. No valve should be touched while any one is inside any boiler. Then if anything happens it will be an accident; affairs like these we have mentioned cannot be called accidents.—*Locomotive.*

Navigation is now open the whole length of the St. Clair river. The American passenger steamer Mary, of the river line, left Port Huron at five o'clock this afternoon for Algonac and way-ports, and will continue to make her daily trips leaving Port Huron at 3.30 p. m.

SAMUEL F. HODGE & CO.,
MANUFACTURERS OF
MARINE,
Stationary & Portable Engines,
MINING MACHINERY AND
PROPELLER WHEELS,
Riverside Iron Works, 314 to 326 Atwater Street,
DETROIT, MICH.

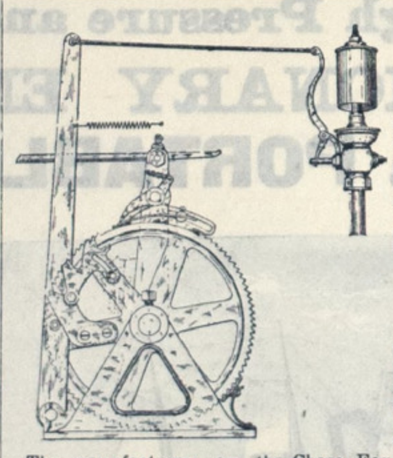
H. G. TROUT,
KING IRON WORKS,
BUFFALO, N. Y.,
MANUFACTURER OF

Triple Expansion Marine Engines,
Three Cylinder and Fore and Aft and Steeple Compound Marine Engines,
High and Low Pressure Engines
SECTIONAL PROPELLER WHEELS,
PROPELLER, TUG & YACHT WHEELS
These wheels are noted for their extra speed and towing power or aproportionate saving of coal.
PRICES QUOTED ON APPLICATION.



DETROIT, MICH.
Thomas McGregor,
CENTRAL BOILER WORKS
MANUFACTURER OF
Marine and Stationary
BOILERS,
—ALL KINDS OF—
Rendering Kettles, Tanks,
—AND—
SHEET IRON WORK

ARTHUR & BOYLAN,
Steamboats, Tugs, etc, Coaled Day and Night.
DEALERS IN LACKAWANNA ANTHRACITE COAL.
Woks: Ft. West River St., Whisky Island, C. P. R'y. Slip, Government Pier
OFFICE 130 RIVER-ST., CLEVELAND, OHIO.


Chase Fog Whistle Machine
This machine has been placed on the following steamboats during the past year: SPOKANE, WALLULA, KASOTA, CHARLEMAGNE TOWER, JR, YAKIMA, MISSOULA, SITKA, FAYETTE BROWN, R. J. HACKETT, FOREST CITY, SPARTA, HAVANA, VIENNA, OSCAR TOWNSEND, CITY OF CLEVELAND, HENRY CHISHOLM, SUPERIOR, E. B. HALE, M. B. GROVER, J. S FAY, R. P. RANNEY, SMITH MOORE, CHARLES J SHEFFIELD, IRA H. OWEN, CAMBRIA, CORSICA, J. H. OUTHWAITE, SAMUEL MATHER, R. R. RHODES, COLUMBIA, AURORA, OHIO, WM. EDWARDS, S. E. SHELDON, AUSTRALASIA, RALEIGH, BULGARIA, ROUMANIA, J. F. EDDY, HIAWATHA, THOS. ADAMS, A. P. WRIGHT, GRADSTONE, E. P. WILBUR, SOO CITY, E. M. PECK, ROBERT L. FREYER AND NORTHERN LIGHT,
To the President and Board of Supervising Inspectors of Steam Vessels:
Your committee to which was referred the "Chase Fog Whistle Machine" beg leave to report: "That we have carefully examined the same and find that it blows at regular intervals, being worked by the engine, thereby insuring regular and continuous blasts for any length of time that may be required and we recommend it or similar device to owners of steam is as an additional safeguard to navi to.
H. S. LUBBOCK, GEO. H. STARBUCK, W. D. ROBINSON, } Committee.
The manufacturers are the Chase Fog Whistle Machine Co., corner of Elm and Spruce streets, Cleveland, O.

DETROIT BOAT WORKS
—SOLE MANUFACTURERS OF—
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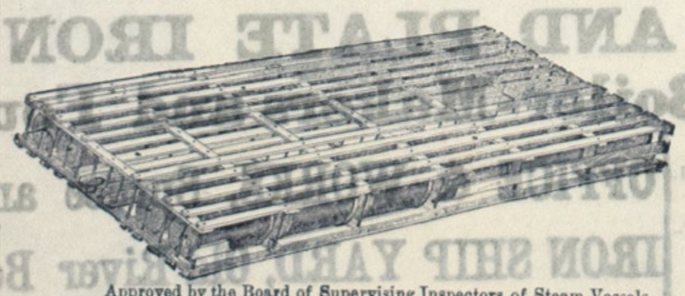
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6	4 x 6	40
8	4 x 8	50
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15	6 x 10	75
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30	7 x 15	125
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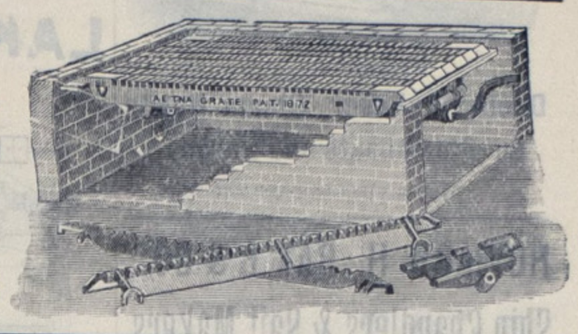

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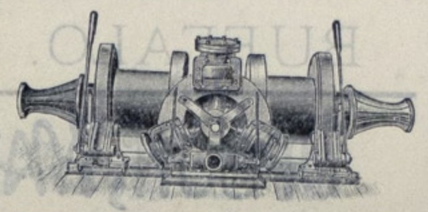
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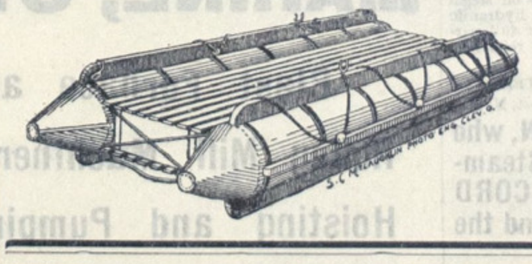
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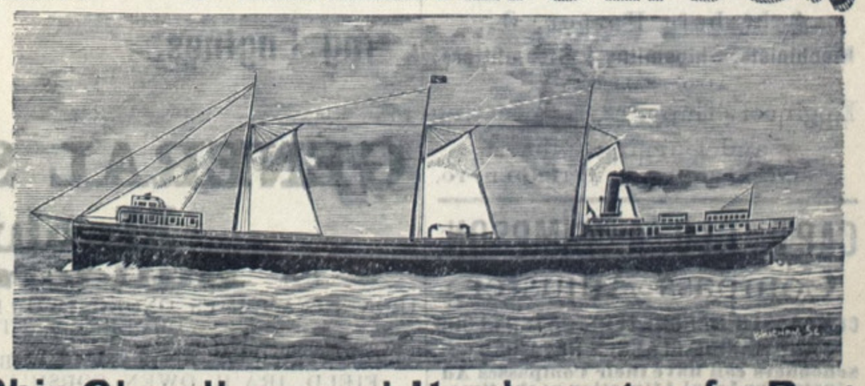
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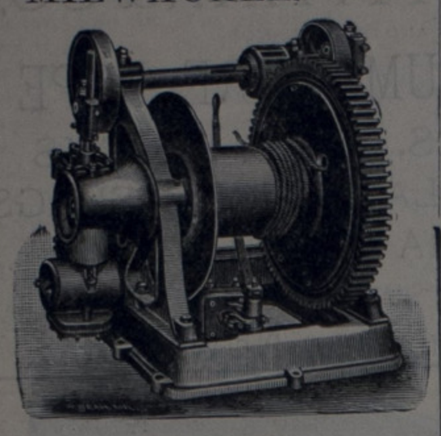

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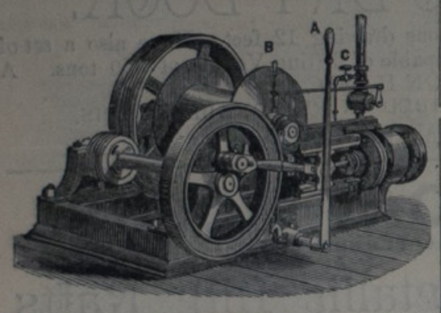

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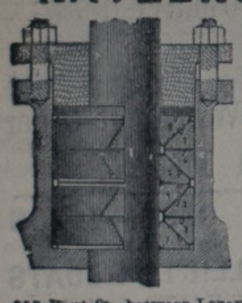

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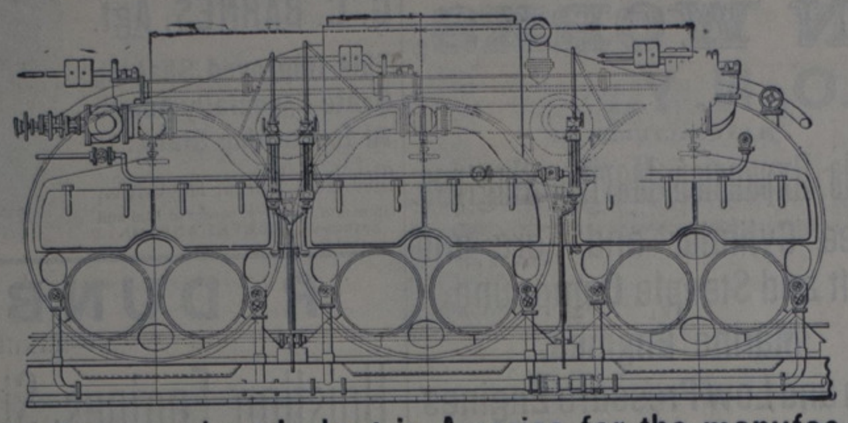

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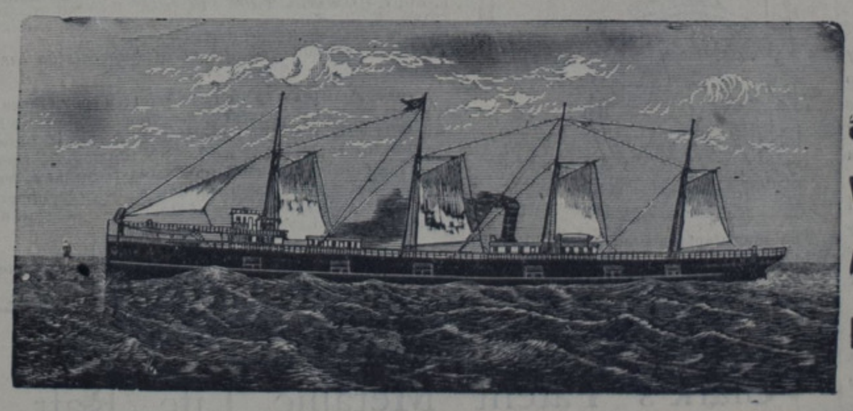

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